

Q. How do you determine that? [934] A. During 1944 relatively small amounts of energy were supplied to the Safe Harbor plant from other sources in Pennsylvania, hence most of the energy transmitted from Safe Harbor to Maryland over the 220 kv circuits came from Safe Harbor generation.

Q. To what other companies does Safe Harbor sell its capacity and energy? A. The entire output of Safe Harbor is sold two-thirds to Baltimore Company and one-third to Holtwood.

Q. Who transmits the energy sold to the Baltimore Company by Safe Harbor? A. The energy purchased by Baltimore Company from Safe Harbor is transmitted from Safe Harbor over the Holtwood system.

Q. With respect to the amounts of electric energy which Exhibits 38 and 40 show was transmitted from the Holtwood System in Pennsylvania, to the Baltimore-Washington System in Maryland, during the year 1944, was that electric energy consumed at points outside of the State of Pennsylvania? A. Yes. The Baltimore Company sells the energy it received from Holtwood to its customers in Maryland. One of Baltimore's customers is the Potomac Electric Power Company, which receives electric energy directly from Susquehanna's facilities at Takoma Park Maryland. Potomac Electric Power [935] Company distributes that energy to its customers in Maryland and in the District of Columbia.

Q. With respect to the amounts of electric energy which Exhibits 38 and 40 show was transmitted from Maryland to Pennsylvania, during 1944, in which state, or states, was that energy generated? A. Electric energy transmitted from Maryland to Pennsylvania, over the 220 and 66 kv circuits was generated in the plants of the Baltimore Company, in Maryland, or in the plants of the Potomac Electric Power Company, in the District of Columbia. Some of it may have been generated in the plants of industrial

companies located in Maryland which supplied relatively small amounts of energy to the Baltimore Company.

Q. With respect to the amounts of electric energy which Exhibits 38 and 40 show is transmitted from Maryland, to Pennsylvania, did you make any studies to ascertain whether or not any of that energy was sold by Holtwood for resale to other electric utility companies in Pennsylvania? A. Yes, I did.

Q. Referring to Exhibit 41, will you designate the points at which Holtwood sells electric energy to others in Pennsylvania, at wholesale for resale? A. Holtwood sells electric energy for resale to Pennsylvania Power & Light Company at the Donegal Tap, which [936] is located near the Safe Harbor plant; at Lehman Farm. At the interconnection point shown directly below the number designating circuit 18 at the Holtwood hydro plant, and at the interconnection point shown directly below the number designating Circuit No. 3, at the Holtwood hydro plant.

Holtwood sells electric energy for resale to the Philadelphia Electric Company, at the latter's Newlinville Substation in Coatesville, Pennsylvania. The interconnection points at this substation are shown directly below the numbers designating Circuits 13 and 14.

Holtwood also sells electric energy for resale to the Metropolitan Edison Company, at the Violet Hill Substation in York, Pennsylvania. The points of interconnection at this substation are shown to the right of the 69 kv bus in circuits 82 and 83 at Violet Hill.

At this point, since the low tension equipment including the transformers at Violet Hill Substation were recently sold to the Edison Light & Power Company, the interconnection points as shown on Exhibit 41 at the Violet Hill Substation are different from what they now show on Exhibit 41. The interconnection point shown just to the left of the numbers 82 and 83 are correct. The interconnection points shown in the four low tension feeders should

be eliminated and there should be interconnection points shown between the high tension side of the transfer and the high tension bus; that is, in [937] each one of the transformer circuits between the high tension side of the transformer and the high tension bus.

Q. In other words, if I understand that last answer, Mr. Roland, the diagram marked as Exhibit 41 was prepared before that sale of the Violet Hill Substation took place, is that right? A. That is correct.

TRIAL EXAMINER: When did that sale take place? How recently?

THE WITNESS: I was just informed that it was, I believe, in February or March of this year that the sale took place.

TRIAL EXAMINER: Can you make the changes on Exhibit 41 for Identification which would bring that exhibit up to date?

THE WITNESS: Yes.

TRIAL EXAMINER: It would be preferable to have a supplemental sketch rather than to change the exhibit itself. Is that possible?

MR. GOLDBERG: Will it be satisfactory to the Examiner if the witness indicates by a cross, let us say, the new points of delivery?

TRIAL EXAMINER: I think so.

MR. GOLDBERG: And eliminate the old points of delivery shown on Exhibit 41 by just crossing them out?

By MR. GOLDBERG:

[938] Q. Can that be done that way, Mr. Roland?

TRIAL EXAMINER: So long as it is clear what the old points were and what the new points are after the changes have been made.

By MR. GOLDBERG:

Q. Can it be done in the way I suggested, Mr. Roland? Have the Exhibit 41 show the new points of delivery by cross-marks which we can designate as "new points of delivery since sale of the Violet Hill Substation", and then we can designate the old points by writing on the exhibit "old points of delivery prior to sale of substation". Can it be done that way, Mr. Roland? A. Yes, that can be done.

MR. GOLDBERG: May I suggest then, Mr. Examiner, that that be done as has just been indicated?

MR. MYSE: It might be wise to check whether or not there has been a change in the metering points as well as the interconnection. I think there has been some change—I am not sure.

TRIAL EXAMINER: That can be taken up before the exhibit is ruled on.

MR. GOLDBERG: Then we will check on that and make all the necessary changes to make it conform to the situation since the sale of the substation early in 1946.

By MR. GOLDBERG:

[939] Q. Now, Mr. Roland, will you continue with your answer with respect to delivery points by Holtwood? A. Holtwood sells and receives energy on an interchange basis with the Philadelphia Electric Company, at Thorndale, Pennsylvania, and at Perryville, Maryland, through the facilities of the Pennsylvania Railroad Company.

Q. Will you describe the facilities by means of which electric energy shown on Exhibits 38 and 40 was transmitted from Maryland to Pennsylvania, and can be transmitted to the interconnection points which you have just described, using if you will Exhibit 41 for reference purposes. A. The bulk of the electric energy transmitted from Maryland

to the Holtwood System in Pennsylvania, is transmitted over the two 220 kv circuits.

Small amounts of energy are transmitted from the Highlandtown substation in Maryland, to the Holtwood plant in Pennsylvania, over circuits 1, 2, 5 and 6.

The energy transmitted from Maryland to Pennsylvania, over the 220 kv circuits comes into the Safe Harbor Plant over circuits Nos. 2302 and 2303. There are transformers in these two circuits which step the voltage down from 220 kv to 13 kv. These transformers are owned and operated by the Safe Harbor Water Power Corporation. The 13 kv side of these two transformers, Nos. 2202 and 2203, connect directly to the north and south buses at Safe Harbor. From this bus, [940] energy received from Maryland can be transmitted through Circuits 692 and 693, through transformers in each circuit which steps the voltage up to 69 kv, to Donegal Tap and to Lehman Farm. At these two points, electric energy is sold at wholesale for resale to the Pennsylvania Power and Light Company.

Electric energy delivered to the bus at Safe Harbor can also be transmitted over Circuits 692 and 693, to the 13 kv, 60 cycle bus at Holtwood plant, over Circuits 15 and 16 via Lehman Farm.

Energy transmitted from Maryland to the 13 kv, 60 cycle bus at the Holtwood plant over the circuits which I have named can be transmitted from this bus to the Metropolitan Edison Company, at the Violet Hill Substation in York over Circuits 11 and 12, to the Philadelphia Electric Company at its Newlinville Substation in Coatesville over Circuits 13 and 14, and to the Pennsylvania Power and Light Company's Engleside Substation in Lancaster over Circuit 18.

Electric energy transmitted to the 60 cycle bus at Holtwood can also be transferred to the 25 cycle buses at the Holtwood hydro plant, through frequency changers 61 and 62. From the 69 kv, 25 cycle bus at the Holtwood hydro plant, electric energy can be transmitted to the Pennsyl-

vania Power & Light Company's Engleside Substation in Lancaster over Circuit No. 3.

[941] Q. Are the facilities which you have designated facilities for the transmission of electric energy? A. Yes.

Q. You stated that you made studies to ascertain whether or not electric energy transmitted from Maryland to Safe Harbor is sold by Holtwood to its customers in Pennsylvania. Is that correct? A. Yes.

MR. GOLDBERG: At this point, Mr. Examiner, I would like to have marked for identification an exhibit consisting of 22 pages entitled, "Generation and Transmission of Electric Energy on Holtwood-Safe Harbor System and Transmission from Maryland to Holtwood's Resale Customers in Pennsylvania by Hours for Twenty Days of 1944."

TRIAL EXAMINER: The document handed to the reporter may be marked Exhibit No. 42 for Identification.

(Exhibit No. 42 is marked for Identification.)

By MR. GOLDBERG:

Q. Mr. Roland, referring to Exhibit 42 for Identification which has just been marked? A. Yes, sir.

Q. Did you prepare this exhibit? A. It was prepared by me and one of my assistants under my direct supervision.

Q. What in general does it purport to show? [942]
A. This document shows the generation and transmission of electric energy on the Safe Harbor-Holtwood System as well as the amounts of electric energy transmitted from Maryland to Holtwood's resale customers in Pennsylvania during each hour of twenty days in 1944.

Q. Does it show the percentage of the energy delivered to Holtwood's wholesale customers in Pennsylvania which is transmitted from Maryland? A. Yes, that is shown in columns 14, 17 and 29.

Q. How were the twenty days chosen which you used in your study? A. I selected representative days. On July 26, 1945, I called on Mr. Von Eiff, Interconnection Engineer of Holtwood, to discuss with him the matter of obtaining a record of hourly watt-hour meter readings at various points on the Holtwood system during a low-flow period.

Mr. Von Eiff stated that in 1944 low flows occurred during the month of August. I asked for a period of low flows for the reason that during low flows on the Susquehanna River, I anticipated that electric energy transfers from Maryland to Holtwood's customers in Pennsylvania would be at a maximum. On the basis of Mr. Von Eiff's statements I selected the week beginning August 20, 1944. At that time, on blank forms which I had with me, I designated the various circuits with the appropriate meter number for which I wished to secure [943] hourly data for the entire week of August 20, 1944. Mr. Von Eiff had the hourly readings which I requested transcribed from Holtwood Company log sheets to the blank forms which I had provided. The completed forms were mailed to us on August 20; I returned to Baltimore during the latter part of August, 1945, and examined the company's log sheets showing hourly generation at Safe Harbor as well as the hourly input to Safe Harbor from Maryland over the 220 kv circuits for each day of 1944. From an examination of these log sheets and from an examination of a tabulation showing average daily river flow in the Susquehanna River at Holtwood for each day of 1944, I designated twelve additional days and requested that Holtwood furnish hourly data for each of these days similar to that furnished for the week of August 20. In November I asked Mr. Von Eiff to furnish similar data for April 19, 1944.

MR. MYSE: Do you mean 1944?

THE WITNESS: I meant to say 1945—in other words, I returned to Baltimore during the latter part of August,

1945, and examined company's log sheets. Is it to that you refer?

MR. MYSE: Yes.

By MR. GOLDBERG:

Q. Proceed. A. In making my selections I endeavored to designate days which would cover a wide range of stream flow but which would give particular emphasis to and would be reasonably [944] representative of those periods when river flows were such that the amounts of energy supplied from Maryland to supplement the Safe Harbor and Holtwood plants were a maximum. For this reason, 17 of the total of 20 days I designated were for days when the average daily stream flow was 21,200 efs or less.

MR. GOLDBERG: Mr. Examiner, I ask to have marked for identification as Exhibit No. 43 a tabulation entitled, "Pennsylvania Water & Power Company Susquehanna River Flows."

TRIAL EXAMINER: The tabulation may be marked Exhibit No. 43 for Identification.

(The document referred to was marked Exhibit No. 43 for Identification.)

By MR. GOLDBERG:

Q. Briefly, Mr. Roland, refer to Exhibit 43 and tell us what that exhibit shows! A. Well, it shows the river flow in the Susquehanna River, 24 hour average in thousands of cubic feet per second, as measured at the Holtwood Plant.

Q. That is for the year 1944 only? A. For the year 1944.

Q. How does a flow of 21,200 cfs compare with the median flow of the Susquehanna River? A. The median flow of the Susquehanna River at Holtwood based on 1917 to 1941 flows is 21,000 cfs.

[945] Q. On how many days in an average year of flow would the flows be equal to or less than 21,000 cfs? A.

According to a flow duration curve for the Susquehanna River at Holtwood based on 1917 to 1941 flows, which was submitted by Pennsylvania Water & Power Company, in its application for license for the Holtwood project—Exhibit I-1 Section 12—stream flows would be equal to or less than 21,000 cfs for approximately 182 days of the year. That is such flows would be available approximately 50 per cent of the time.

Q. Referring to Exhibit 43, for how many days in 1944 was the average stream flow 21,200 cfs or less? A. There were 218 such days.

Q. During what months did they occur? A. January, February, June, July, August, September, October, November and December.

Q. Do you consider that energy flows on the Holtwood-Safe Harbor system during the selected 17 days on which stream flow was 21,200 cfs, or less, are reasonably representative of energy flows during the 218 days during which stream flow was 21,200 cfs or less? A. Yes. By that I mean, that if detailed studies of hourly flows were made for the 218 days, the results would, in general, be comparable to the results shown in Exhibit 42 for the selected 17 days when flows were [946] 21,200 cfs or less.

Q. On what basis did you select the other three days? A. April 27, 1944, was designated as an example of high river flow. The flow on that date was 149,100 cfs. December 11, 1944, was designated because it was the day when the system peak load of the year occurred on the Safe Harbor-Holtwood-Baltimore power pool. The river flow on December 11 was 37,400 cfs. April 19, 1944, was designated because it was the day of maximum hourly output from the Safe Harbor-Holtwood system. The river flow on that day was 61,500 cfs.

Q. Why did you designate only three days of high river flow? A. In general, as river flows increased above 21,200 cfs, the number of hours of zero generation at Safe Harbor decreased as did the amounts transmitted to Safe

Harbor from Maryland. When river flows were in excess of roughly 40,000 cfs, little or no energy was transmitted from Maryland to Safe Harbor. In view of this situation, I decided to make only a few calculations for periods of river flows in excess of 21,200 cfs.

Q. What approximations or errors, if any, are involved in your studies in which you show the amounts of energy transmitted from Maryland to the Holtwood system in Pennsylvania and sold by Holtwood for resale in Pennsylvania? [947] A. I was advised by Mr. Von Eiff that Holtwood attempts to limit the errors in its watt-hour meters to within plus or minus two per cent. Operators read these to the nearest mwh which may introduce a fairly large percentage of error where the readings are very small. Most of the readings which I am dealing with in my study are, however, sufficiently large so that any error from this source is negligible.

In view of the fact that the meter readings which I employ in my studies are readings to the nearest mwh, I also made my calculation to the nearest mwh. Calculated values of less than 0.5 are indicated by a dash. I have also neglected transmission losses in my studies which introduces a small error. In a few cases, energy transfers over a particular circuit reversed its direction during the hour. For those hours, I used the net transfer over the circuit during the hour for some of my calculations. This may introduce a small error.

During the low-flow periods, one of the house units at Safe Harbor is in operation either for generation or as a condenser, even though the main generating units are idle. During periods of high flow, when the main units are in operation as generators, both house units are also in operation as generators. I was advised that up to two megawatts might be delivered to the main bus from the house units during the high flow periods. In my studies, I have not taken [948] into account the fact that during low flows, station service may be supplied from the main bus and that

during high flows some of the output of the house units may be supplied to the main bus.

Q. In your opinion, do the possible errors which you named, and the approximation which you used, materially affect the accuracy of your computations? A. No, excepting the computations for the relatively few hours during which the energy transfers were very small.

Q. Referring to Exhibit 42, will you describe how you computed the quantities of electric energy, if any, transmitted from Maryland to Pennsylvania Power & Light Company, at Donegal Tap and at Lehman Farm and to Pennsylvania Water & Power Company's Holtwood Station, using some particular hour as an example. A. From data shown on the first five columns of Exhibit 42, I computed the percentage of the total amount of energy supply to the 13 kv, 60 cycle bus at Safe Harbor which was transmitted from Maryland.

For example: Column 1, of page 1, which is for Wednesday, January 26, 1944, shows the amount of generation by the 60 cycle main units at Safe Harbor during each hour of the day. During the hour ending 2 A. M. that day the generation by these units was zero. The output of the main 60 cycle generators at Safe Harbor is measured by meter No. 1, which [949] metering point is shown on Exhibit 39. Column 2 shows the amount of energy transferred from the 25 cycle bus to the 13 kv, 60 cycle bus at Safe Harbor through the frequency changer. The amounts shown in Column 2 are measured by meter No. 3 "out".

During the hour ending 2 A. M. on January 26 no energy was transferred from the 25 cycle bus to the 60 cycle main bus through the frequency changer.

Column 3 shows the amounts of energy supplied to the 13 kv, 60 cycle bus at Safe Harbor from the 69 kv circuits. These amounts are measured by meter No. 8 "in".

During the hour ending 2 A. M., no energy was supplied to the Safe Harbor bus over the 69 kv circuits.

Column 4 shows the amounts of electric energy transmitted from Maryland to the 13 kv, 60 cycle bus at Safe

Harbor over the two 220 kv circuits as measured by meters numbers 5 and 6 "in".

During the hour ending 2 A. M., on January 26, sixty-seven megawatthours were transmitted from Maryland to the 13 kv, 60 cycle bus at Safe Harbor. Column 6 shows the percentage of the total amount of energy supplied to the 13 kv, 60 cycle bus at Safe Harbor which was transmitted during the hour from Maryland. That is, this column is equal to the entries in column 4 multiplied by 100 and divided by the entries in column 5.

[950] During the hour ending 2 A. M. on January 26, 100 per cent of the electric energy supplied to the 13 kv, 60 cycle bus at Safe Harbor was transmitted from Maryland.

From the entries in Columns 7 through 10, I computed the percentage of the total sendout from Susquehanna-Safe Harbor over the 69 kv circuits which was transmitted from Maryland.

For example: Column 7 shows the amounts of electric energy transmitted from the 13 kv, 60 cycle bus at Safe Harbor to Maryland as measured by meters numbers 5 and 6 "out". No energy was so transmitted during the hour ending 2 A. M. on January 26.

Column 8 shows the amount of energy transferred from the 13 kv, 60 cycle bus to the 25 cycle bus at Safe Harbor through the frequency changer and is measured by meter No. 3 "in". During the hour ending 2 A. M., 23 megawatt hours were so transferred.

Column 9 shows the sendout from Safe Harbor over the 69 kv circuits as measured by meter No. 8 "out". During the hour ending 2 A. M., 43 megawatt hours was transmitted out of Safe Harbor over the 69 kv circuits towards Donegal, Lehman Farm and the Holtwood Station.

Column 10 shows what portion, in megawatt hours, of the total send-out from Safe Harbor over the 69 kv circuits was [951] transmitted from Maryland. During the hour ending 2 A. M., the total sendout from Safe Harbor over the 69 kv circuits was transmitted from Maryland. Column

11 shows the percentage of the total sendout from Safe Harbor over the 69 kv circuits which came from Maryland. During the hour ending 2 A. M., this percentage was 100, being equal to column 10, multiplied by 100 and divided by column 9.

From columns 12 and 13, I computed the percentage of the deliveries made to Pennsylvania Power & Light Company at Donegal, which were transmitted from Maryland. That is, column 12 shows the amount of energy delivered to Pennsylvania Power and Light Company via Donegal. The entries in this column are equal to the sum of the deliveries to Lancaster as measured by meter No. 12; to Little Inch and Big Inch as measured by meters 9 and 10; to South Manheim as measured by meter No. 13; to South Akron as measured by meter No. 14, plus or minus the net interchange at Harrisburg as measured by meter No. 11.

From these meter readings, I determined that 7 megawatt hours were delivered to Pennsylvania Power and Light Company, at the Donegal Tap during the hour ending 2 A. M., on January 26.

Column 13 shows what portion, in megawatt hours, of the total deliveries to Pennsylvania Power and Light Company via Donegal were transmitted from Maryland.

[952] During the hour ending 2 A. M., this was 7 megawatt hours. Column 14 is the ratio of column 13 to column 12 in per cent. During the hour ending 2 A. M., 100 per cent of the total amount delivered to Pennsylvania Power and Light Company via Donegal was transmitted from Maryland.

From columns 15 and 16, I computed the percentage of the deliveries made to Pennsylvania Power & Light at Lehman Farm, which were transmitted from Maryland.

For example: Column 15 shows the amount of electric energy delivered to Pennsylvania Power and Light Company at Lehman Farm and is measured by meter No. 15 to Lancaster. During the hour ending 2 A. M., January 26, 16 megawatt hours were delivered to Pennsylvania Power and Light Company at this point.

Column 16 shows the portion, in megawatt hours, of the total deliveries to Pennsylvania Power and Light Company at Lehman Farm which was transmitted from Maryland. During the hour ending 2 A. M., 16 megawatt hours, or the total amount delivered to Pennsylvania Power and Light Company at Lehman Farm during the hour, was transmitted from Maryland.

Column 17 is the ratio of column 16 to column 15 in per cent.

From the entries in columns 18 and 19, I computed the percentage of the deliveries to the 13 kv, 60 cycle bus at Holtwood via Lehman Farm, which were transmitted from [953] Maryland. That is, column 18 shows the amount of electric energy transmitted to the 13 kv, 60 cycle bus at Holtwood via Lehman Farm as measured by meter No. 28 "in" at Holtwood. During the hour ending 2 A. M., 20 megawatt hours were so transmitted. The minus sign in front of some of the entries in column 18 means that the flow during the hour was in a direction opposite to that indicated by the column heading.

[954] That is, for some of the hours the flow reversed its direction and energy was transmitted from the 13 kv, 60 cycle bus at Holtwood toward Lehman Farm.

Column 19 shows the portion, in megawatthours, of the total deliveries to the 13 kv, 60 cycle bus at Holtwood via Lehman Farm, which came from Maryland.

MR. MYSE: May I interrupt for a moment and ask you what that small N in parentheses is?

MR. GOLDBERG: I was just about to reach that.

By MR. GOLDBERG:

Q. Will you please continue? A. During the hour ending 2 A. M., January 26, 20 megawatthours, or the total amount delivered to the bus at Holtwood, came from Maryland.

Column 20 is the ratio of Column 19 to Column 18 in percent.

Q. I note that opposite some of the entries, for example during the hour ending 11 P. M., Column 18, for January 26, 1944, you have an "N" in parenthesis. What does the "N" signify? A. The letter "N" following some of the entries in Column 18 means net flow during the hour. That is for some of the hours the flow reversed its direction in the hour, so I used the new flow. For example, on January 26, 1944, during the hour ending 11 P. M., 7 megawatthours was transmitted [955] to the 13 kv, 60 cycle bus from Lehman Farm as shown in Column 25 and 1 megawatthour was transmitted from that bus to Lehman Farm as shown in Column 30 during the same hour both being measured by Meter No. 28. The net flow for that hour was, therefore, 6 megawatthours.

Q. Do blank spaces indicate zero values? A. Yes.

Q. How do you conclude that all of the electric energy delivered to Pennsylvania Power and Light Company at Donegal and at Lehman Farm and that all of the energy delivered to the 13 kv, 60 cycle bus at Holtwood via Lehman Farm during the hour ending 2 A. M., January 26, came from Maryland? A. All of the energy delivered at those three points during that hour was transmitted from Safe Harbor over the 69 kv circuits. All of the electric energy supplied to the 13 kv, 60 cycle bus at Safe Harbor during that hour came from Maryland; therefore, all of the energy supplied to Pennsylvania Power & Light Company at Donegal and at Lehman Farm, and to the Holtwood bus via Lehman Farm had to come from Maryland.

Q. In other words, if I understand your answer, of the 67 megawatthours transmitted from Maryland to Safe Harbor during the hour ending 2 A. M., January 26, 23 megawatthours were supplied to the 25 cycle bus through the frequency changer and 43 megawatthours were transmitted away from Safe Harbor over the 69 kv circuits—am I right so far? [956] A. Yes.

Q. And of that latter amount, 7 went to Pennsylvania Power & Light Company at Donegal, 16 went to Pennsyl-

vania Power & Light Company at Lehman Farm, and the 20 megawatthours remaining went to the bus at Holtwood. Is that correct? A. Yes.

Q. Did that same condition obtain during other hours on January 26, 1944? A. Yes. The same condition obtained during the first seven hours of the day and also during the hours ending 11 P. M., and 12 P. M.

Q. Have you prepared an exhibit showing the magnitude and direction of flow on the Holtwood-Safe Harbor System for the hour ending at 2 A. M., on January 26, 1944? A. I have.

MR. GOLDBERG: At this time, Mr. Examiner, may I have marked for identification as Exhibit 44 the exhibit described by the witness in his last answer?

TRIAL EXAMINER: Yes, the document may be marked Exhibit 44 for identification.

(The document referred to was marked Exhibit No. 44 for Identification.)

By MR. GOLDBERG:

Q. Mr. Roland, I show you Exhibit 44 and ask you if that is the exhibit to which you have referred in your last [957] answer. A. That is correct.

Q. And I take it the numbers near the arrows indicate the magnitude of flows in megawatthours, is that correct? A. That is correct.

MR. MYSE: Do the figures show the net flow during the hour?

THE WITNESS: As I recall, for this particular hour there was no reversal during the hour, therefore it would not only be the net but would be also the gross flow. I mean, the direction of flow was in the same direction during the hour.

By MR. GOLDBERG:

Q. Referring you to page 1 of Exhibit 42, the hour ending at 2 A. M., on January 26, 1944, it appears, does it

not, that there were no reversals of flow? A. That is correct, yes.

Q. In your studies of energy transfers for the 20 days, did you find hours in other days when all the energy delivered to Pennsylvania Power & Light Company at Donegal and at Lehman Farm and all the energy delivered to Holtwood via Lehman Farm, was transmitted from Maryland? A. Yes. There were 204 hours representing 43 per cent of the total hours in the 20 days when all the energy delivered to Pennsylvania Power & Light Company at Donegal was [958] transmitted from Maryland.

There were 189 hours representing 39 per cent of the total hours, when all the energy delivered to Pennsylvania Power & Light Company at Lehman Farm, and 180 hours representing 38 per cent of the total hours, when all the energy delivered to the bus at Holtwood via Lehman Farm, was transmitted from Maryland.

Q. During how many hours of the 20 days, did you find that there was no generation by the main 60 cycle generators at Safe Harbor? A. There were 239 such hours representing 50 per cent of the total hours.

Q. During how many hours of the 20 days did you find that all of the energy supplied to the 13 kv, 60 cycle bus at Safe Harbor came from Maryland? A. There were 213 such hours representing 44 per cent of the total number of hours in the 20 days.

Q. Did you determine how many hours during the year 1944 when there was no generation by main units at Safe Harbor? A. Yes. In 1944, there was no generation by main units at Safe Harbor during 1,882 hours, or 21.4 per cent of the total hours in the year.

Q. Did you make such a determination for each month in the year 1944? [959] A. Yes.

Q. What percentage of the total hours of each month in 1944 was the generation by main units at Safe Harbor zero during the hour? A. There was no generation by main units at Safe Harbor during 22.2 per cent of the

hours in January; 19 per cent in February; zero per cent in March, April and May; 8.3 per cent in June; 29.8 per cent in July; 48 per cent in August; 45 per cent in September; 32.2 per cent in October; 36.7 per cent in November, and 16 per cent in December.

[960] Q. Mr. Roland, do you find it generally true that when the hydro units at Safe Harbor are shut down, energy is transmitted to Safe Harbor from Maryland? A. During the 20 days energy was transmitted to Safe Harbor during all the hours when the main hydro units were shut down. On the basis of this sampling, which I consider to be reasonably representative, and judging from the fact that during all months of 1944, except the high-flow months of March, April and May, substantial quantities of energy were transmitted to Safe Harbor from Maryland, I would conclude that energy was transmitted to Safe Harbor from Maryland when the hydro units at Safe Harbor were shut down.

Q. Were there some hours during the 20 days when electric energy was transmitted from Maryland to Safe Harbor during the same hours when energy was generated by the main units at Safe Harbor? A. Yes.

Q. Will you state how much electric energy was transmitted from Maryland to Safe Harbor during some hour when there was generation by the main units at Safe Harbor? A. Referring to page 3 of Exhibit 42, which is for Wednesday, Feb. 16, 1944, it will be noted that during [961] the hour ending 1 P. M., 37 megawatthours were transmitted to the 13 kv 60 cycle bus at Safe Harbor from Maryland as shown by column 4.

During the same hour, 15 megawatthours were generated by the main 60 cycle units at Safe Harbor as shown in column 1. No energy was supplied to the 60 cycle bus during that hour from the frequency changer. The total amount of energy supplied to the 60 cycle bus at Safe Harbor during that hour was, therefore, 52 megawatthours.

Of this amount, 71 per cent was transmitted from Maryland.

Q. During that same hour, how much was delivered from Safe Harbor to Pennsylvania Power and Light Company? A. During the hour ending 1 P. M., on February 16, 1944, a total of 41 megawatthours as shown by column 9 were transmitted to the Donegal Tap from the Safe Harbor bus, over the 69 kv circuits. During that hour, eight megawatthours were delivered to Pennsylvania Power & Light Company at the Donegal Tap, and 23 were delivered to Pennsylvania Power & Light Company at Lehman Farm, as shown in columns 12 and 15 respectively.

Q. During the hour ending 1 P. M., February 16, 1944, how much was delivered from Safe Harbor to the 13 kv, 60 cycle bus at the Holtwood Substation? A. During that hour, 10 megawatthours were delivered to the 13 kv, 60 cycle bus at the Holtwood Substation, as [962] shown by Column 18.

Q. Did you attempt to determine what part, if any, of the electric energy transmitted from Maryland to Safe Harbor during the hour ending 1 P. M., on February 16, 1944, was sold to Pennsylvania Power & Light Company at Donegal and Lehman Farm, and what part, if any was transmitted to the Holtwood bus? A. Yes, I did.

Q. Upon what basis did you make that determination? A. A bus, such as the 13 kv, 60 cycle bus at Safe Harbor, the 13 kv, 60 cycle bus and the 11 kv, 25 cycle bus at Holtwood Station, provides a common connection for several supply and feeder circuits and may be regarded as pooling the energy delivered to it by the supply circuits. For this reason, I have assumed that circuits transmitting electric energy from such a common connection, which is jointly supplied from two or more sources simultaneously, transmit energy from each of those sources in the ratio that the amounts supplied from each bears to the total supply.

Q. Why did you make that assumption? A. The layout of the main buses and circuits and switching arrange-

ments at Safe Harbor and Holtwood hydro are such that co-mingling of energy takes place when energy is supplied at those points simultaneously from more than one source. For this reason, it was necessary to apportion [963] a share of the energy supplied from each source to each of the sendout circuits.

Q. In your opinion is such an assumption reasonable?

A. Yes.

Q. Is it necessary to make that assumption for every hour in order to determine the percentage of energy transmitted from Maryland in the circuits showing sendout from Safe Harbor? A. No.

Q. Under what conditions is it unnecessary? A. It is unnecessary when the entire supply at Safe Harbor is from Maryland, that is, when the entry in column 6 is 100 per cent.

Q. Is it unnecessary to make that assumption for other hours in order to determine whether or not some energy transmitted from Maryland is sent out from Safe Harbor during such hours? A. Yes.

Q. Have you nevertheless used that assumption to determine the percentages shown in column 6 for certain hours in which it is not necessary to use the assumption in order to determine that some of the send-out from Safe Harbor over the 69 kv circuits must be energy transmitted from Maryland? A. Yes.

• • •
[964] Q. Mr. Roland, a moment ago when you said that it was unnecessary when the entire supply at Safe Harbor is [965] from Maryland, that is, when the entry in column 6 is 100 per cent, were you referring to column 6 of Exhibit 42? A. That is correct.

Q. Under what conditions do you do that? A. When the sendout over the 69 kv circuits at Safe Harbor exceeds the supply to the 13 kv, 60 cycle bus from the main 60 cycle generators and from the frequency changer at Safe Harbor,

some of the sendout over the 69 kv circuits had to come from Maryland. That is, when the entry in column 9 is greater than the sum of the entries in columns 1 and 2, the difference had to be supplied from Maryland.

Q. Referring to your calculations in which you have used the assumption to which you previously referred, will you please describe the application of that assumption?

A. As I stated previously, on February 16, 1944, during the hour ending 1 P. M., 41 megawatt hours were transmitted from Safe Harbor to Donegal over the 69 kv circuits, and that of this amount, 8 megawatt hours were delivered to Pennsylvania Power & Light Company at Donegal, and 23 megawatt hours to Pennsylvania Power & Light Company at Lehman Farm. I also stated that the remaining 10 megawatt hours were delivered to the 13 kv, 60 cycle bus at the Holtwood Substation.

Since 71 per cent of the amount transmitted at Safe Harbor came from Maryland during that hour, I have [966] considered that 71 per cent of the amount transmitted from Safe Harbor and sold to Pennsylvania Power & Light Company at Donegal and Lehman Farm, and that 71 per cent of the amount transmitted from Safe Harbor to the Holtwood Substation during that hour came from Maryland, and that the balance came from the 60 cycle main generating units at Safe Harbor. Thus, of the 8 megawatt hours delivered to Pennsylvania Power & Light Company at Donegal, 6 megawatt hours as shown in column 13 came from Maryland and 2 megawatt hours from Safe Harbor generation; of the 23 megawatt hours sold to Pennsylvania Power & Light Company, at Lehman Farm, 13 megawatt hours as shown in column 16 came from Maryland and 7 megawatt hours from Safe Harbor generation.

Likewise, of the 10 megawatt hours delivered to the Holtwood Substation, 7 megawatt hours as shown in column 19, came from Maryland and 3 megawatt hours from Safe Harbor generation.

Q. Have you prepared an exhibit showing the magnitude and direction flows of Holtwood and Safe Harbor system and transmission from Maryland to Holtwood's resale customers in Pennsylvania? A. I have.

MR. GOLDBERG: At this time, Mr. Examiner, I ask to have marked for identification Exhibit 45 the diagram referred to.

[967] TRIAL EXAMINER: The diagram may be marked Exhibit 45 for Identification.

(Exhibit No. 45 was marked for Identification.)

By MR. GOLDBERG:

Q. I show you Exhibit 45 for identification, Mr. Roland, and I ask you if this is the exhibit to which you have referred in your last answer? A. That is correct.

Q. Mr. Roland, what is a "bus"? A. A bus conductor or group of conductors is a switch gear assembly which serves as a common connection for three or more circuits. That is the definition which appears on Page 97 of The American Standard Definitions of Electrical Terms.

Q. Going back to Page 1 of Exhibit 42 you stated that during the hour ending 2 A. M., January 26, 1944, 20 megawatt hours were transmitted from Maryland to the 13 kv, 60 cycle bus at Holtwood. What happened to that energy?

A. The 20 megawatt hours transmitted from Maryland to the 13 kv, 60 cycle bus at Holtwood, together with the energy supplied by the steam units at Holtwood and from Pennsylvania Power & Light Company, during that hour, was transmitted out from the 13 kv, 60 cycle bus at Holtwood to Metropolitan Edison at York, to Philadelphia Electric Company at Coatesville, to the 11 kv, 25 cycle bus at Holtwood through the frequency [968] changer and to the station service bus at Holtwood.

Q. In column 28 for the hour ending 2 A. M., January 26 you show 20 megawatt hours from Maryland and in column 29 you show 54 per cent from Maryland. How did

you arrive at those amounts? A. Column 21 shows the amount of energy generated by the steam electric units at Holtwood and is measured by meter No. 24. Column 22 shows the amount of energy generated during the hour by the 60 cycle hydroelectric units at Holtwood and is measured by meter No. 25.

Column 23 shows the amount of energy transferred from the 11 kv, 25 cycle bus to the 13 kv, 60 cycle bus at Holtwood through the frequency changer and is measured by meter No. 23 "out."

Column 24 is the total amount of energy supplied to the 13 kv, 60 cycle bus at Holtwood from the 60 cycle generating units and from the frequency changer at Holtwood.

Column 25 shows the amounts transmitted from Lehman Farm to the 13 kv, 60 cycle bus at Holtwood as measured by meter No. 28 "in."

Column 26 is the sum of the amounts supplied to the 13 kv, 60 cycle bus at Holtwood from the Metropolitan Edison Company and the Pennsylvania Power & Light Company and is equal to the sum of the meter readings numbers 27 and 29 "in."

[969] Column 27 shows the total amount of energy supplied to the 13 kv, 60 cycle bus at Holtwood.

Column 28 has the same entries as column 19 and shows the portion in megawatt hours of the total amount of energy transmitted to the 13 kv, 60 cycle bus at Holtwood via Lehman Farm which came from Maryland.

Column 29 is the ratio of the column 28 to column 27 expressed in per cent. During the hour ending 2 A. M. a total of 37 megawatt hours was supplied to the 13 kv, 60 cycle bus at Holtwood. Of this amount 20 megawatt hours or 54 per cent was transmitted from Maryland via Safe Harbor and Lehman Farm.

Q. Will you explain what the entries in columns 30 to 35 inclusive represent? A. Column 30 shows the amount of energy transmitted from the 13 kv, 60 cycle bus at Holtwood to Pennsylvania Power & Light Company and in a

few instances to Safe Harbor via Lehman Farm. The amounts so transmitted are measured by meter No. 28 "out".

Column 31 shows the amount of energy delivered to the Metropolitan Edison Company and the Edison Light and Power Company at Violet Hill Substation in York, Pennsylvania, over circuits 11 and 12. The amounts delivered to these two companies are measured by meter No. 29 "out".

Column 32 shows the amount of energy delivered to [970] Pennsylvania Power & Light Company, over circuit No. 18 as measured by meter No. 27 "out".

Column 33 shows the amount of energy delivered to Philadelphia Electric Company, at Coatesville over circuit Nos. 13 and 14, as measured by meter No. 26. In this connection, I should point out that the meters used for billing Metropolitan Edison Company are located at the Violet Hill Substation, therefore, the amount actually delivered to this company at Violet Hill over circuits 11 and 12 would be less than the amount measured by meter No. 29 in the amount of transmission losses between Holtwood Station and the metering points at Violet Hill Substations.

Likewise, the amount delivered to Philadelphia Electric Company at Coatesville is less than the amount shown by meter No. 26 by the amount of losses between Holtwood and Coatesville.

Column 34 shows the amount of energy delivered to the frequency changer from the 13 kv, 60 cycle bus at Holtwood as measured by meter No. 23 "in". Column 35 is the total amount of sendout from the 13 kv, 60 cycle bus at Holtwood.

Q. I notice in some of your answers you have used the expression "PP & L Company" occasionally. When you use that in your answer or anywhere in your exhibits; does it refer to the Pennsylvania Power & Light Company?

A. Yes.

Q. What portion of the total amount of electric [971] energy transmitted from the 13 kv, 60 cycle bus at Holtwood to the Metropolitan Edison Company, to Philadelphia Electric Company, and what portion of the total amount supplied to the frequency changer during the hour ending 2 A. M., on January 26, came from Maryland? A. As shown in column 29, 54 per cent of ~~the total~~ amount of electric energy supplied to the 13 kv, 60 cycle bus at Holtwood during that hour was transmitted from Maryland. As I stated previously, I have considered that circuits transmitting electric energy from any bus which is supplied from two or more sources simultaneously, transmits energy from each of those sources in the ratio that the amount supplied from each bears to the total supply.

Accordingly, 54 per cent of the electric energy delivered to the Metropolitan Edison Company and to the Philadelphia Electric Company, and 54 per cent of the energy supplied to the frequency changer during the hour 2 A. M., January 26, was electric energy transmitted from Maryland.

In other words, during that hour approximately 3 megawatt hours were transmitted from Maryland to the Metropolitan Edison Company and approximately 11 megawatt hours were transmitted from Maryland to the Philadelphia Electric Company, and approximately 5 megawatt hours were transmitted from Maryland to the 60 cycle end of the frequency changer at Holtwood.

[972] Q. In other words, then, to obtain the amounts of electric energy transmitted from Maryland to the Metropolitan Edison Company over circuits 11 and 12, and to the Pennsylvania Power & Light Company, over circuit 18, and to the Philadelphia Electric Company, over circuits 13 and 14 and to the frequency changer from the 13 kv, 60 cycle bus at Holtwood, you multiply the percentage figures shown in column 29 by the total deliveries as shown in columns 31, 32, 33 and 34. Is that correct? A. Yes.

Q. Column 29 then shows the percentage of the total deliveries of electric energy to Metropolitan Edison over circuits 11 and 12; to Pennsylvania Power & Light Company over circuit 18; and to Philadelphia Electric Company over circuits 13 and 14 which came from Maryland via Safe Harbor? A. Yes.

Q. During how many hours of the twenty days to which you have referred, was electric energy transmitted from Maryland via Safe Harbor and Holtwood to Metropolitan Edison at York; to Pennsylvania Power & Light Company, over circuit 18; to Philadelphia Electric Company at Coatesville; and to the 11 kv, 25 cycle bus through the frequency changer? A. Electric energy was transmitted from Maryland via Safe Harbor and Holtwood to Metropolitan Edison Company during 268 hours.

[973] To Pennsylvania Power & Light Company over circuit 18 during 51 hours; to Philadelphia Electric Company during 277 hours; and, to the 60 cycle end of the frequency changer during 217 hours. In terms of percentage of total hours in the 20 days, these amounts are 56, 11, 58 and 45 per cent, respectively.

[974] Q. Will you explain how you derived the entries shown in columns 36 through 39? A. Column 36 shows the amount of energy supplied to the 11 kv, 25 cycle bus from the 13 kv, 60 cycle bus through the frequency changer at Holtwood, as measured by meter No. 22 "out".

Column 37 shows the amount of electric energy generated by the 25 cycle units at Holtwood as measured by meter No. 20.

Column 38 shows the amount of energy transmitted from the Highlandtown Substation in Maryland to the Holtwood Station. The amounts so transmitted are measured by meter No. 34 located at Highlandtown.

Column 39 is the total amount of electric energy supplied to the 11 kv, 25 cycle bus at Holtwood.

Q. Is electric energy at times transmitted from Maryland via Safe Harbor and the 13 kv, 60 cycle bus at Holt-

wood, to the 11 kv, 25 cycle bus at Holtwood? A. Yes. For example, during the hour ending 3 A. M., on January 26, 54 per cent of the energy supplied to the frequency changer from the 13 kv, 60 cycle bus was transmitted from Maryland. Therefore, approximately 4.3 megawatt hours, which is the product of columns 29 and 36, was supplied to the 11 kv, 25 cycle bus at Holtwood from Maryland.

Q. The amount of energy transmitted to the 11 kv, 25 cycle bus at Holtwood from Maryland via Safe Harbor is [975] equal to the entries in column 29 multiplied by corresponding entries in column 36, is that right? A. Yes.

Q. What part of the electric energy transferred to the 11 kv, 25 cycle bus from the 13 kv, 60 cycle bus at Holtwood came from Holtwood's steam-electric units during the hour ending 2 A. M., January 26, 1944? A. The ratio of the entries in column 21 to the entries in column 27 multiplied by the corresponding entries in column 36 are the amounts transferred from the steam-electric units to the 11 kv, 25 cycle bus at Holtwood. For the hour ending 2 A. M., January 26, 1944, the amount transferred was 16 divided by 37 multiplied by 8, or about 3.5 megawatt hours.

Q. What became of the energy transferred from Holtwood's steam plant to the 11 kv, 25 cycle bus? A. The electric energy so transferred was transmitted in part to Highlandtown and in part to Pennsylvania Power & Light Company.

Q. Will you explain the entries in columns 40 to 43 inclusive? A. Column 40 shows the amount of energy delivered to Pennsylvania Power & Light Company, over Circuit No. 3, as measured by meter No. 18, located at Engelside Substation in Lancaster, column 41 shows the amount of energy transmitted [976] from Holtwood to Highlandtown, Maryland, over Circuit Nos. 1, 2, 5 and 6 as measured by meter No. 34 at Highlandtown.

Column 42 shows the amount of energy transferred from the 25 cycle bus to the 13 kv, 60 cycle bus through the frequency changer at Holtwood as measured by meter No. 22 "in".

Column 43 is the total sendout from the 11 kv, 25 cycle bus at Holtwood.

Q. Are there times when electric energy is transmitted from Maryland via Safe Harbor and Holtwood to Pennsylvania Power & Light Company, over Circuit No. 3?

A. Yes. For example, during the hour ending 2 A. M., January 26, 1944, two megawatt hours as shown by column 40 were delivered to the Pennsylvania Power & Light Company from the 11 kv, 25 cycle bus at Holtwood. During the same hour 8 megawatt hours as shown in column 36 were transferred from the 13 kv, 60 cycle bus to the 11 kv, 25 cycle bus through the frequency changer and during that hour was the only source of supply to the 11 kv, 25 cycle bus.

As shown in column 29 for the hour ending 2 A. M., January 26, 1944, 54 per cent of the energy supplied to the 13 kv, 60 cycle bus during that hour came from Maryland.

Since all the energy delivered to Pennsylvania Power & Light Company from the 25 cycle bus during that hour came from the 13 kv, 60 cycle bus through the frequency changer, it follows that it would include the same percentage of [977] energy from Maryland as that shown in column 29. In other words, during those hours when no energy is generated by the 25 cycle generators at Holtwood, and no energy is received from Highlandtown, the amount of energy transmitted to Pennsylvania Power & Light Company, over Circuit No. 3, from Maryland via Safe Harbor is equal to the entry in column 29 multiplied by the entry in column 40.

Q. How would you determine what percentage of the total amount of electric energy delivered to Pennsylvania Power & Light Company over Circuit No. 3 came from Maryland for those hours when energy is transferred from the 13 kv, 60 cycle bus through the frequency changer to the 11 kv, 25 cycle bus and when during the same hour energy was generated by the main 25 cycle units at Holtwood?

A. The amount of energy in megawatt hours

transmitted from Maryland via Safe Harbor to the 11 kv, 25 cycle bus through the frequency changer is equal to the entries in column 29 multiplied by the entries in column 36. The ratio of the product so derived to the total amount of electric energy supplied to the 11 kv, 25 cycle bus as shown in column 39 multiplied by 100 is the percentage of energy from Maryland via Safe Harbor which is transmitted to Pennsylvania Power & Light Company over Circuit No. 3.

Q. During how many hours of the 20 days was some electric energy transmitted from Maryland via Safe Harbor and [978] Holtwood to Pennsylvania Power & Light Company over Circuit No. 3? A. There were 235 such hours representing 49 per cent of the total hours in the 20 days. The amounts for some of those hours are very small.

Q. Did you find any hours during the 20 days when electric energy delivered to Pennsylvania Power & Light Company over Circuit No. 3 was electric energy transmitted from Highlandtown over Circuits Nos. 1, 2, 5 and 6? A. Yes. During the hours ending 3 A. M. to 6 P. M., on November 12, 1944, all the energy delivered to the Pennsylvania Power & Light Company over Circuit No. 3 came from Highlandtown, Maryland, over Circuits Nos. 1, 2, 5 and 6.

Q. Was the electric energy transmitted from Maryland to the Pennsylvania Power & Light Company at Donegal and Lehman Farm, to Metropolitan Edison Company at York, to Philadelphia Electric Company at Coatesville, as shown by Exhibit No. 42 consumed outside of Maryland? A. Yes.

Q. Was the transmission of electrical energy from Maryland to Pennsylvania a daily occurrence in 1944? A. With the exception of the high flow months, that is, March, April and May, electric energy was transmitted from Maryland to Safe Harbor at some time during practically every day of 1944.

[979] Q. Does it follow from what you have just said, that with the exception of the high flow months of March, April

and May, some electric energy was transmitted from Maryland and delivered to Holtwood's customers in Pennsylvania every day of the year? A. Yes, the number of hours that such transmission from Maryland to Holtwood's customers in Pennsylvania, as well as the amounts transmitted, would vary over a wide range, of course, as shown by Exhibit 42.

Q. From the study you have made, do Pennsylvania Water & Power Company and Susquehanna Transmission Company of Maryland each own and operate facilities for the transmission of electric energy, which is transmitted from one or more states and consumed at points outside thereof? A. Yes.

Q. Are the amounts of such electric energy so transmitted substantial? A. Yes. This is evident from a comparison of the amounts so transmitted to the requirements at Coatesville, Pennsylvania, a city of 14,006 population, 1940 census. For the entire year of 1944, the energy requirements to serve Coatesville was 152,292 megawatt hours at a maximum demand of 24.5 mw.

Q. Does the transmission of such substantial amounts occur frequently? [980] A. Yes.

Q. Generally speaking, what are the facilities for the transmission of such energy? A. The substations and transmission lines owned by Holtwood and Susquehanna as shown on Exhibit 37 are used for that purpose.

Q. Does Holtwood sell for resale electric energy so transmitted? A. Yes.

Q. To what companies does Holtwood sell for resale electric energy so transmitted? A. Baltimore Company, Pennsylvania Power & Light Company, Philadelphia Electric Company and Metropolitan Edison Company.

Q. Do Holtwood and Susquehanna each own and operate facilities for such sales? A. Yes.

Q. Generally speaking, what are those facilities? A. Those facilities would include the substations and transmission lines owned by Holtwood and Susquehanna, as

shown on Exhibit 37, together with metering and other equipment for billing and recording sales.

Q. Do Holtwood and Susquehanna own and operate facilities for such transmission and sale at wholesale, which are not used for the generation of electric energy? [981]

A. Yes.

Q. Do Holtwood and Susquehanna own and operate facilities for such transmission and sale at wholesale, which are not used in local distribution? A. Yes, with the possible exception of some of the low tension equipment at Susquehanna's Highlandtown substation, which might be regarded as distribution facilities.

Q. Do Holtwood and Susquehanna own and operate facilities for such transmission and sale at wholesale which are not used only for the transmission of electric energy which is not transmitted from any state and consumed at a point outside thereof?

MR. MYSE: I don't understand that question, if your Honor please.

MR. GOLDBERG: Mr. Examiner, there is a purpose in phrasing that question in that fashion.

TRIAL EXAMINER: The witness may answer it.

THE WITNESS: Yes, that follows from one of my previous answers.

By MR. GOLDBERG:

Q. Do Holtwood and Susquehanna own and operate facilities for such transmission and sale, which are not facilities for the transmission of electric energy consumed wholly by the [982] transmitter? A. Yes.

MR. GOLDBERG: That completes Mr. Roland's testimony on this subject, Mr. Examiner, with one question that I meant to ask and failed to.

By MR. GOLDBERG:

Q. Referring to Exhibit 45 which I show you, Mr. Roland, do the figures appearing at the upper section of

that exhibit and the arrows represent the magnitude and direction of flows? A. Yes, the arrows indicate the direction and the figures indicate the amounts in megawatt hours.

Q. And that is true of Exhibit 44, is that right? A. That is right.

MR. GOLDBERG: At this time, Mr. Examiner, I offer in evidence Exhibits 37, 38, 39, 40, 41, 42, 43, 44 and 45.

TRIAL EXAMINER: Is there any objection to the receipt of these exhibits marked for identification?

MR. SPARKS: No objection, subject to cross-examination, your Honor. We would like to ask your Honor to reserve ruling on Exhibit 42.

TRIAL EXAMINER: Any objection by counsel for the interveners, any one of them?

(No response.)

TRIAL EXAMINER: Exhibits 37, 38, 39, 40 and 41 are [983] received in evidence.

(The documents previously marked for identification Exhibit Nos. 37, 38, 39, 40 and 41, are received in evidence.)

TRIAL EXAMINER: The ruling on Exhibit 42 is reserved. Exhibits 43, 44 and 45 are received in evidence.

(The documents previously marked for identification Exhibit Nos. 43, 44 and 45, are received in evidence.)

CROSS-EXAMINATION.

By MR. MYSE:

[986] Q. If I understand you then, you did study other days and you just picked out these 20 days from the days you had studied, is that it? A. Well, when you say other days—the data I had for all the days was very meager. I

looked at the log sheets which gave me the generation at Safe Harbor and the deliveries to Safe Harbor over the 220 kv circuits, and I believe that is all that I had before me. And the number of hours of generation by days at Safe Harbor. I believe that is all the information that I had available when I selected the 20 days, plus this record of the stream flows—the daily stream flows.

[987] Q. Referring to Exhibits 38 and 40? A. 38 and 40?

Q. Yes. A. I have that before me.

Q. On both these exhibits you have a note that the amount shown did not include transfers across the Pennsylvania-Maryland boundary over the Conestoga-Perryville lines; is that correct? [988] A. Yes.

Q. Will you tell me why you did not include those transfers? A. I do not know whether I could have gotten the data accurately by months for that.

Q. Does that complete your answer? A. I was just considering and trying to think back as to why I did not include them. I think the main reason probably was I considered that the deliveries to the railroad company were deliveries to the ultimate consumer, and we were not concerned with that.

Q. All the deliveries over this line were deliveries to the ultimate consumer; is that correct? A. No, that is not true because part of the deliveries over that line is for interchange with the Philadelphia Electric Company. That is the only reason I can think of now, I may have had for not taking that into account.

[990] RE-DIRECT EXAMINATION.

By MR. GOLDBERG:

[991] Q. Referring to the notes on Exhibits 38 and 40 which are to the effect that they do not include the transfers across Pennsylvania, Maryland Boundary over the Con-

estoga-Perryville line: Did I understand you to say that that line is used to serve the railroad? A. Not exclusively.

Q. Is the service to the railroad single phase service?
A. Yes, sir.

[992]

SAMUEL JOSEPH,

was called as a witness by and on behalf of the Federal Power Commission, being first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION.

By MR. GOLDBERG:

Q. Please state your name? A. My name is Samuel Joseph.

Q. Where do you reside? A. I reside in Paterson, New Jersey.

Q. What is your present occupation? [993] A. I am engaged in the textile manufacturing business in Paterson.

Q. Please explain the nature of your participation in this case? A. On August 1, 1945, I was granted a year's leave of absence by the Commission under an arrangement which contemplated that I would return from time to time for such work as the Commission might require.

In September or October, 1945, the Commission requested me to testify in the Louisville Gas & Electric Company case before the Kentucky Public Utilities Commission and I did so.

On February 1, 1945, after my leave had run for six months, I tendered my resignation effective at the pleasure of the Commission. My resignation was accepted as of April 12, 1946.

I was requested to accept an assignment covering limited participation in this case in the capacity of con-

sultant to the Commission. It is in this latter capacity that I now appear as a witness.

Q. Will you please state your educational background?

A. I graduated from the Wharton School of the University of Pennsylvania in 1928, with a degree of Bachelor of Science. I attended Columbia University Graduate School of Business Administration and did some work towards a master's degree. I graduated from the Brooklyn Law School in 1933 [994] with a degree of Bachelor of Laws. I was granted a certificate as a certified public accountant by the State of New York in 1932, and was admitted to the bar of the State of New York in 1934.

Q. Will you please state your experience? A. I was first employed in the rate regulating field in 1934. I have worked on state-wide investigations of the telephone rates in Louisiana, Alabama and West Virginia.

I have also worked on investigations of other utility companies, including electric, water and gas companies.

I have testified before the Louisiana and Alabama Public Service Commissions, the Public Service Commission of West Virginia, the Federal Power Commission, the Utah Public Service Commission, the Kentucky Public Utilities Commission and the Securities and Exchange Commission.

In 1943 I was loaned by the Federal Power Commission to the Office of Price Administration. I testified as a witness for the Office of Price Administration in a case involving the Washington Gas Light Company before the District of Columbia Public Utilities Commission.

In 1942 I was loaned by the Federal Power Commission to the Utah Public Service Commission, and testified as a witness for that Commission in a case involving the Utah Power and Light Company. On October 10, 1944, the Utah Commission's order in all respects was unanimously affirmed by the [995] Supreme Court of the State of Utah. In discussing the question of rate of return the Utah Su-

preme Court, in its opinion, made specific reference to the exhibit I had introduced in that case.

I began employment with the Federal Power Commission in August, 1939. I was first employed as a Senior Examiner of Accounts and was assigned to the investigation of the Natural Gas Pipeline Company of America and the Texoma Natural Gas Company, as accounting examiner in charge.

Q. Was that the case that went to the Supreme Court in which the Commission's order was affirmed? A. That was the case, yes, sir.

Q. Will you proceed with your statement of your experience? A. While with the Federal Power Commission I received several promotions and held the position of Chief Examiner of Accounts in the Division of Finance at the time of my resignation.

I have taken part in the investigations of the following companies:

The Southern Bell Telephone and Telegraph Company, in the States of Louisiana and Alabama; New Orleans Public Service Company; Louisiana Power and Light Company; Louisiana Public Utilities Company; Baton Rouge Water Company; Chesapeake and Potomac Telephone Company of West Virginia; [996] Wheeling Electric Company; Appalachian Electric Power Company; the Natural Gas Pipeline Company of America and Texoma Natural Gas Company; Panhandle Eastern Pipe Line Company; Michigan Gas Transmission Corporation; Interstate Natural Gas Corporation; El Paso Natural Gas Company; Washington Gas Light Company; Utah Power and Light Company; Cities Service Gas Company; Memphis Natural Gas Company; Mississippi River Fuel Corporation; Safe Harbor Water Power Corporation; and Louisville Gas & Electric Company.

My duties with the Federal Power Commission included responsibility for making studies and conducting research on the subject of fair rate of return for public

utilities. In this connection I was charged with the duty of keeping informed on the important subject of income and excess profits taxes, and the relationship of such taxes, both present and prospective, to the earning of a fair rate of return by the utility companies.

Q. While you were employed as a member of the Commission's staff did you prepare exhibits on the subject of fair rate of return? A. I did.^t

Q. Did you submit such exhibits and testify on the subject of fair rate of return in proceedings before the Federal Power Commission and other commissions? A. Yes, I did. I prepared and submitted exhibits [997] on the subject of fair rate of return in the Interstate Natural Gas Company case, the El Paso Natural Gas Company case, the Cities Service Gas Company case, the Mississippi River Fuel Company case, the recent Safe Harbor Water Power Corporation case, and the United Fuel Gas Company case, all of which were before the Federal Power Commission.

In addition, I prepared and submitted exhibits on the subject of fair rate of return in the Utah Power and Light Company case before the Utah Commission and in the Louisville Gas & Electric Company case before the Kentucky Commission.

Q. Can you give a general description of the nature of the exhibits which you sponsored in these cases? A. Briefly, the exhibits which I sponsored might be described as comprehensive statistical compilations which were designed to afford, and which in my opinion actually did afford, the Commissions to whom they were presented a sound basis for the exercise of judgment in the establishment of a fair rate of return for public utilities. The exhibits were brought down to date for use in each proceeding. This work of keeping the information current was done by myself and other members of the Commission's staff.

Q. I take it from what you have said that the exhibits were prepared for the specific purpose of aiding the

Federal Power Commission and other commissions in deciding the issue of fair rate of return in a rate case, is that [998] correct? A. Yes, sir.

Q. When you compiled and prepared the exhibits of which you have spoken, did you have in mind any decision or decisions of the United States Supreme Court? A. Yes, I had in mind especially the Bluefield Water Works decision.

In addition, I considered as pertinent the statement made in the United Railways v. West case, to the effect that what is a fair rate of return is not capable of exact mathematical demonstration.

I might add that exhibits similar to those I have mentioned were before the Supreme Court in the Natural Gas Pipeline Company of America case, and in the Hope Natural Gas Company case.

MR. GOLDBERG: At this time, Mr. Examiner, may I have marked for identification with the next exhibit number—I think it is 46—the document entitled: "Docket IT-5915, Pennsylvania Water & Power Company, Rate of Return Study," dated April 15, 1946.

TRIAL EXAMINER: The document may be marked Exhibit 46 for Identification.

(The document referred to was marked Exhibit Exhibit 46 for Identification.)

By MR. GOLDBERG:

[999] Q. Mr. Joseph, I direct your attention to Exhibit No. 46 for Identification, and ask you whether that exhibit is similar to the exhibit on fair rate of return which you sponsored in the cases you have mentioned? A. Yes, it is.

Q. How was the Exhibit 46 for Identification prepared? A. Basically, the exhibit flows from those exhibits which I prepared while I was a member of the Commission's staff.

The charts and tabulations are substantially similar to those used in the exhibits which I previously sponsored.

The statistics and information subsequent to that contained in the last similar exhibit which I sponsored has been compiled by members of the Commission's staff in accordance with my request.

Q. Mr. Joseph, does each chart or table in Exhibit 46 for Identification show the source from which you obtained the data and information contained therein? A. Yes, I think it does. Throughout the exhibit the source of the data is shown in an appropriate place at the bottom or end of the schedule.

Q. In your judgment, Mr. Joseph, does Exhibit No. 46 for Identification give the Commission the data and information upon which it can rely in establishing a fair rate of return for the Pennsylvania Water & Power Company and [1000] Susquehanna Transmission Company of Maryland in these proceedings? A. Yes, in my opinion the exhibit furnished the Commission with a comprehensive statistical background, and affords a sound basis for the exercise of judgment in the establishment of a fair rate of return for an electric utility such as the Pennsylvania Water & Power Company and Susquehanna Transmission Company of Maryland.

Q. To your knowledge the Exhibit No. 46 for Identification, or a substantially similar exhibit, has been submitted by Federal Power Commission witnesses in other proceedings before this Commission? A. Yes. My predecessor, Mr. Charles W. Knapp, Jr., submitted very similar exhibits in the Natural Gas Pipeline Company of America case, the Chicago District Electric Generating case, the Colorado Interstate case, the Hope Natural Gas Company case and in the earlier Safe Harbor Water Power Corporation rate case.

Q. You mean the 1939 Safe Harbor case, is that right? A. Yes, the 1939 Safe Harbor case.

Q. Has the exhibit been brought down to date for each proceeding? A. Yes. In so far as possible the exhibit contains the latest information at the time of its compilation for use.

[1001] Q. Will you, Mr. Joseph, define the terms "return" and "rate of return"? A. The "return" received by a public utility consists of the amount of revenue remaining after deduction of necessary and reasonable operating expenses, rents, taxes, and depreciation and amortization accruals, but before provision for interest, dividends, or additions to corporate surplus. This "return" is ordinarily conceived of as the product of a "rate base" times a given "rate of return". Conversely, the "rate of return" may be defined as that percentage rate which, when applied to the rate base, will yield the total overall return for the particular utility.

MR. GOLDBERG: That ends the direct testimony of this witness, Mr. Joseph.

At this time I offer in evidence Exhibit No. 46 for Identification.

TRIAL EXAMINER: Any objection to the offer of the exhibit?

MR. SPARKS: No objection, subject to cross-examination.

TRIAL EXAMINER: Any objection on the part of counsel for any of the intervenors?

(No response.)

TRIAL EXAMINER: Hearing no response, Exhibit No. 46 for Identification is received in evidence.

(Exhibit 46 for Identification is received in Evidence.)

[1066]

JOHN M. NEWLANDS,

a witness produced on behalf of the Federal Power Commission, being duly sworn, testified as follows:

DIRECT EXAMINATION.

By MR. GOLDBERG:

Q. Will you state your full name for the record, please?
A. John M. Newlands.

Q. Are you employed by the Federal Power Commission? A. I am.

Q. How long have you been employed by the Federal Power Commission? A. Continuously by the Commission since March, 1939.

[1067] Q. What is your position with the Federal Power Commission? A. I am a Chief Examiner of Accounts.

Q. In what bureau or division of the Commission are you employed? A. In the Division of Accounts of the Bureau of Accounts, Finance and Rates.

Q. Will you describe generally your education and experience and your duties with the Commission? A. I attended Bates College, Lewiston, Maine, and was graduated with the degree of Bachelor of Science in 1928. I studied accounting and finance at Northeastern University, Springfield, Massachusetts.

I am a certified public accountant in the State of New York. I was employed for about 2 years prior to my graduation from college by the Diamond Match Company as bookkeeper in charge of all factory accounting and cost records for the Springfield, Massachusetts plant.

After graduation I joined the staff of Scovell Wellington Company of New York City, certified public accountants with whom I remained about nine years as a senior accountant making audits and investigations.

• • •
[1068] A. In 1938 I entered the employ of Arthur Andersen and Company, Certified Public Accountants, as senior ac-

countant. I left in March, 1939, to join the staff of the Federal Power Commission.

My assignments as public accountant included educational institutions, investment companies, manufacturing and commercial firms, building contractors, including such institutions and firms as Cornell University, White, Weld & Company, L. C. Smith & Corona Typewriters, Inc., Bigelow Sanford Carpet Company, Revere Copper & Brass Company and Henry Holt and Company.

Since entering the employ of the Federal Power Commission I have been engaged mainly on accounting investigations in connection with rate cases, but also assisted in a special investigation of the Associated Gas & Electric Company in 1939.

Q. Will you describe the rate cases on which you have worked and the work you did? A. In the Hope Natural Gas Case, Docket G-100, 101, 113, and 127 I participated in the investigation of the plant investment and the preparation of the study of the depreciation reserve requirement and annual depreciation expense.

[1069] I participated in the investigation of the plant investment of Chicago District Electric Generating Company, Docket IT-5500.

I investigated the plant investment of Natural Gas Pipeline Company of America and Texoma Natural Gas Company, Dockets G-109 and G-112 under the supervision of Mr. Joseph.

In the United Gas Pipeline Company case, G-148, I investigated the plant investment and the historical growth of the United Gas system and prepared a report thereon.

In the Southern Carbon Company case, Docket G-462, I investigated the plant investment and annual and accrued depreciation and prepared a report thereon.

I also collaborated in a report on the revenues, expenses and working capital.

I was in charge of the investigation of the plant investment of the Ohio Fuel Gas Company until transferred to Baltimore on the present case.

Q. What did you do in connection with this proceeding? A. I directed a staff of accountants, making an accounting investigation of the Pennsylvania Water & Power Company and Susquehanna Transmission Company of Maryland, including the plant investment, annual and accrued depreciation, revenue, expenses, working capital, and miscellaneous matters.

[1070] Q. Mr. Newlands, in your answer preceding the last one, you mentioned that you worked under Mr. Joseph's supervision. Is that the same Mr. Joseph who has testified in this proceeding? A. It is.

Q. What records did you use in carrying out your assignment? A. I examined the corporate and accounting records and supplementary documents and correspondence of Pennsylvania Water & Power Company and Susquehanna Transmission Company of Maryland, and the similar records of its predecessors, McCall Ferry Power Company, Susquehanna Contracting Company, J. E. Aldred, Receiver, for the McCall Ferry Company, and the Bondholders Committee.

[1075] Q. Did your examination of Pennsylvania Water & Power include the records of its merged subsidiaries? A. Yes. I examined the books of all merged subsidiary companies. Holtwood Power Company, Susquehanna Transmission Company of Pennsylvania and Pennsylvania Transmission Co.

Q. Did you examine the books of any other subsidiaries of Pennsylvania Water & Power Company? A. Yes. I examined the books of Holtwood Coal Company, Baltimore Electro Alloys Company and Susquehanna Canal and Power Company to a limited extent.

Q. As a result of your examination did you prepare a report? A. Yes.

[1076] MR. GOLDBERG: At this time, Mr. Examiner, we ask to have marked for identification as Exhibit 51 a report entitled "Docket IT-5915, Pennsylvania Water &

**Power Company corporate and financial History—
Early History of the Holtwood Project—Plant Invest-
ment.”**

TRIAL EXAMINER: The document will be marked Exhibit No. 51 for Identification.

(Document marked Exhibit No. 51 for Identification.)

By MR. GOLDBERG:

Q. I show you Exhibit 51 for Identification and ask you if this is the report to which you have referred? A. It is.

Q. Of what does the report consist? A. The report is prepared in two parts; Part I consists of a written statement and Part II consists of schedules and appendices.

Q. What is the nature of the written statement? A. The written statement describes the scope of the report, the corporate and financial history of the company, the early history of the Holtwood Development and the plant investment, including a discussion of some of the examiner's adjusting entries.

Q. Will you please describe the schedules and appendices? A. The schedules have all been prepared on a [1077] consolidated basis where applicable. Schedule 1 is a consolidated balance sheet of Pennsylvania Water & Power Company and Susquehanna Transmission Company of Maryland as at December 1, 1945.

Schedule 2 summarizes the plant as recorded on the books and as adjusted by the examiners.

Schedule 3 shows a summary of Electric Plant in Service as reclassified by the company in its plant reclassification studies, reconciled with the original cost as determined by the examiners. The details of construction work in progress are shown on Schedule 4, similar details at December 31, 1944, and 1943 being shown on Schedules 5 and 6, respectively.

A summary of Plant Held for Future Use showing the purpose for which it is held is shown on Schedule 7. The

examiners' adjusting entries are listed on Schedule 8 with a recapitulation on Schedule 9. Schedules 10 to 27 contain supporting details or explanations of the adjustments.

The appendices present balance sheets and statements of cash receipts and disbursements for the predecessor companies and organization, McCall Ferry Power Company, Susquehanna Contracting Company, J. E. Aldred, Receiver for McCall Ferry Power Company and the Bondholders' Committee.

Q. What conclusions did you reach as to the original cost of Electric Plant in service of Pennsylvania Water & Power Company and Susquehanna Transmission Company of Maryland [1078] at December 31, 1945? A. I determined that the original cost of the consolidated Electric Plant in Service of the two companies at December 31, 1945, is \$32,920,738.

Q. As I understand it, in all of the figures you have omitted the cents, is that correct? A. Yes.

Q. What conclusions did you reach as to the amount of construction work in progress at December 31, 1945? A. I determined that the amount of the consolidated work in progress at December 31, 1945, is \$237,361.

Q. What did you conclude was the amount of Electric Plant Held for Future Use at December 31, 1945? A. I determined the amount of the consolidated Electric Plant Held for Future Use to be \$77,918 at December 31, 1945.

Q. How does your determination of the original cost of Electric Plant in Service compare with the cost claimed by the Company? A. The amount determined by me is \$3,493,493 less than the original amount claimed by the company as at December 31, 1945, as shown on schedule 3 and \$3,468,643 less than the adjusted amount claimed by the company in their Exhibit 25.

Q. Your reference to schedule 3 in your last answer was to Exhibit 51, is that right? A. Yes.

[1079] Q. How does your determination of the amount of construction work in progress at December 31, 1945, com-

pare with the amount claimed by the company? A. It is the same.

Q. How does your determination of the amount of Electric Plant for Future Use compare with the amount claimed by the company? A. It is the same.

Q. Do you recommend that the entire amount of construction work in progress and electric plant held for future use be included in the rate base?

* * *

[1080] A. The answer is "no."

Q. What portion of the amounts in construction work in progress and electric plant held for future use do you recommend for inclusion in the rate base?

* * *

A. In the determination of the rate base for the year 1945, none of the Electric Plant Held for Future Use, as shown by schedule 7, should be included and none of the construction work in progress shown on schedule 4, except Job Order C-1789 for the purchase of additional rights for the Coatesville Transmission Line, in the amount of \$30,124. The Electric Plant Held for Future Use is excluded because the company does not have a definite plan for its use.

Construction Work in Progress is excluded because it is the company's policy to compensate itself for its investment in uncompleted construction by adding interest to construction cost until the property is placed in service. The Non-Project Property included therein totaling \$52,140, consists mainly of property located above Safe Harbor which cannot be used for [1081] the Holtwood Development.

Job orders totaling \$67,848 consisting of rights-of-way held for possible future use in connection with a proposed new Lancaster Transmission Line are excluded because the company has no definite plan for their use. The line

if built will bring in additional revenue to compensate for the additional investment.

The cost of the additional rights for the Coatesville Line on job order C-1789 in the amount of \$30,124 is included in the rate base because the property was actually in service during the entire year 1945.

Q. In this case is original cost synonymous with investment? A. Yes.

Q. Why is original cost synonymous with investment in this case? A. Because all of the property was constructed by the present company and its subsidiaries or was placed in operation by it. There were no acquisitions of operating units or systems.

[1082] Q. On page 40 of the written statement you make a comparison of the amount of interest during construction as determined by the examiners with the total interest actually paid by the company from April 1905 to December 1910.

Would the amount of interest allowed by you exceed the interest paid by the company if you excluded from the interest paid the amount applicable to the period of suspension of construction? A. It would. The total interest paid by the company for the period from April 1905 to December 31, 1910, exclusive of the amount applicable to the period of suspension was approximately \$839,000 which is \$262,000 less than the amount allowed by the examiners in determining the original cost of the properties.

[1129] EDWARD L. DUNN,
a witness produced on behalf of the Federal Power Commission, being first duly sworn, testified as follows:

DIRECT EXAMINATION.

By MR. GOLDBERG:

Q. Will you state your full name for the record, please? A. Edward L. Dunn.

Q. Are you employed by the Federal Power Commission? A. I am.

Q. How long have you been employed by the Federal Power Commission? A. I have been employed continuously since March, 1937.

Q. What is your position with the Federal Power Commission? A. Supervising Accountant.

Q. In what Bureau or Division of the Commission are you employed? A. I am in the Division of Accounts, which is part of the Bureau of Accounts, Finance and Rates.

Q. Will you describe generally, your education and [1130] experience and your duties with the Federal Power Commission? A. I attended Missouri University for one year and also completed the LaSalle Extension University course in accounting. I have also taken advanced courses in accounting and finance at Columbia University in New York City.

For approximately three years I was in the accounting department of Laclede Christy Clay Products Company, St. Louis, Missouri, performing bookkeeping and cost accounting duties.

In 1934 and 1935 I was in the employ of the Federal Power Commission making accounting examinations and reports on electric power companies involving, among other things, determination of original cost.

Then I left the Commission to enter the employ of National Lead Company, 111 Broadway, New York City. I was in the Comptroller's office as an accountant and my

duties included tax studies, depreciation studies, internal audits, costs of manufacturing and refining, and general accounting duties. I returned to the Commission in 1937.

My duties with the Federal Power Commission since 1937 have consisted of the preparation and supervision of accounting investigations and accounting reports. These investigations and reports include gas and electric rate cases and numerous other cases and special assignments, such as assistance to State regulatory authorities, particularly with respect to rate case matters.

[1131] Q. In your employ at the Federal Power Commission, have you participated in any rate cases? A. Yes.

Q. Will you name the cases and describe your participation? A. One of the early rate cases was Safe Harbor Water Power Corporation Docket IT-5494. I did the field work on that case, relating to depreciation accounting, and assisted Mr. C. W. Smith in preparing the report. I had charge of the field investigations and of the reports on plant and depreciation in the Canadian River, Colorado Interstate and Colorado Wyoming cases. Docket numbers G-118, 121 and 124.

I was examiner in charge of the Hope Natural Gas Company Docket G-100, 101, 113 and 127 and the Panhandle Eastern Pipe Line Company case, Docket numbers G-200 and 207, in all of which cases the Commission's orders were sustained by the Supreme Court of the United States.

It was my responsibility to determine the earnings, financial condition, the cost of plant, depreciation and depletion, allowances for working capital, revenues, expenses and taxes in those cases.

I supervised the accounting and reports for the Mississippi River Fuel Corporation, United Carbon Company and Southern Carbon Company rate case Docket numbers G-462 which included the cost of plant, annual and accrued depreciation [1132] and depletion, working capital, revenues, expense~~s~~ income accounts and so forth.

I also devoted a substantial part of my time, during the year 1943, to supervising and testifying in the Utah Power & Light Company rate case, decided by the Utah Commission about October, 1943. I testified in that case on annual and accrued depreciation, revenues, expenses, working capital and other subjects.

I was on loan to the Utah Commission. The Utah Commission's decision was affirmed by the Supreme Court of the State of Utah recently. Similarly, I have been on loan to the city of Cleveland, Ohio, and Louisville, Kentucky, in connection with electric rate cases.

Q. In connection with the Commission's investigation of the rates of Safe Harbor Water Power Corporation in Docket IT-5914 were you in charge of certain phases of that investigation? A. Yes, I was in supervisory charge of the accounting work.

Q. Did you make any studies in connection with the Safe Harbor case? A. Yes.

Q. What studies did you make? A. Determination of annual and accrued depreciation, revenues, expenses, cost of plant, working capital, taxes, [1133] balance sheet and surplus analyses, among other.

Q. Did you testify in that case? A. Yes.

Q. On what subjects? A. The subjects covered by the studies I described.

Q. Did you testify in any of the other ~~rate~~ cases you have mentioned? A. Yes.

Q. Please name them and tell us what subject your testimony covered. A. I testified in the Hope Natural Gas Company case on rate base, annual and accrued depreciation, revenues and expenses, taxes and other subjects. I testified in the Panhandle Eastern Pipe Line rate case on operating costs, earnings, depreciation and plant costs. In the Mississippi River Fuel case I testified on taxes, operations, and trended labor costs.

Q. In connection with the Commission's investigation of the rates of Pennsylvania Water & Power Company and

Susquehanna Transmission Company of Maryland are you in charge of the accounting investigation? A. Yes.

Q. Have you had the assistance of other accountants in your work on this case? A. Yes, a staff supervised by John M. Newlands.

[1134] Q. Did they perform their work under your general direction and supervision? A. Yes.

Q. And are the exhibits which you are about to offer based on the investigation made by you and under your direction? A. Yes.

[1142] Q. Did you make a study of annual and accrued depreciation of Pennsylvania Water & Power Company and Susquehanna Transmission Company? A. Yes, on a consolidated basis.

Q. Did you prepare an exhibit containing the results of your study? A. Yes.

[1143] Q. Mr. Dunn, I hand you Exhibit 61 for Identification and ask you if that is the exhibit to which you have referred? A. It is.

Q. Generally will you please tell us what this exhibit shows? A. It shows the company's depreciation plan and practices and the depreciation expense and depreciation reserves accumulated pursuant to the plan. It shows the adjustments to the depreciation reserve proposed by the Commission's Staff. It also shows the details of depreciation expense computed on the basis of service lives recommended by the Commission's staff engineers and the cost of plant subject to depreciation. It shows the reserve requirement based upon those service lives, the initial plant investment, additions and retirements from the initial date of operation.

Q. Have you included in the exhibit a statement which explains and supplements the schedule? A. Yes.

Q. What depreciation method does the company follow? A. The straight line depreciation method, based

upon service lives and depreciation rates determined by Mr. Walls and applied to the cost of depreciable property.

Q. Did Holtwood use the amounts recorded in the general ledger plant account in its depreciation computations? [1144] A. No. The cost of depreciable property was obtained from a statement of McCall Ferry Power Company as of January 31, 1909, showing the actual cost in various property accounts and to this was added actual expenditures for the year 1910 and for each successive year thereafter.

Q. How do the present service lives compare with the service lives estimated by the Commission's staff? A. The present overall composite rate used by the company is 2.08 per cent or a composite life of 48 years as compared with the staff's rate of 1.74 per cent or 58 years. However, comparison of service lives as determined by Mr. Walls should be made on the basis of the plant at 1930 because the company has used an overall rate of 2½ per cent on property installed since 1930.

Q. What does the comparison show when the 2½ per cent rate on additions since 1930 is excluded? A. The company's composite rate is 1.89 per cent or 53 years as compared with the staff's rate of 1.74 per cent or 58 years.

Q. Did the company adopt the 2½ per cent depreciation rate on additions simultaneously with the effective date of the contract with Consolidated of Baltimore which provided that Consolidated of Baltimore would pay the allowance for depreciation? A. Yes.

[1145] Q. What is the amount of depreciation expense for 1945 computed on the basis of the staff's depreciation rates applied to the cost of depreciable plant? A. \$465,277, which does not include automobile depreciation.

Q. How much depreciation expense did the company charge during the year 1945? A. \$574,245, also excluding automobile depreciation.

Q. What is the reserve requirement as of December 31, 1945, based upon the staff's service lives and cost of plant? A. \$8,408,373.

Q. How does this compare with the book reserve?

A. The book reserve, after applying adjustments thereto for unrecorded retirements and plant additions is \$8,763,118 as of December 31, 1945, which is \$354,745 more than the reserve requirement.

Q. When was this excess accumulated? A. During the past three years, 1943, 1944 and 1945.

Q. Should the amount of \$354,745 be transferred to earned surplus? A. Not in my opinion.

Q. Why not? A. It has been the company's practice to charge certain maintenance to the reserve because it claims the annual depreciation charge provides for such maintenance. [1146] There is a considerable amount of accumulated wear on the surface of the dam which the company claims can be repaired at a cost of from \$500,000 to \$750,000. In view of the fact that the company has actually collected about \$350,000 from its customers for this purpose, the reserve should be retained.

Otherwise, the repairs to the dam would be charged to maintenance, thereby duplicating the costs in the operating accounts and in the power bills.

Q. Should any other item of maintenance be charged to the book reserve in the future? A. No. The reserve is necessary to provide for the retirement of property not maintenance of property. To the extent that a portion of the reserve can be determined to have been accumulated for such large items of maintenance as the resurfacing of the dam or, for example, maintenance which was postponed during the war, which would be maintenance deferred, it is reasonable to charge the cost to the reserve established for such purposes.

Q. Did the company clearly distinguish between deferred maintenance and current maintenance in its charges to the reserve? A. No. Schedule 8 shows a description of the maintenance items charged to the reserve in the amount of \$363,769.05. Many of the items fail to meet even the company's definition of deferred maintenance.

[1147] Q. What is the company's definition of deferred maintenance? A. As stated on page 16 of Exhibit 61 it covers in general repair and resurfacing of concrete structures including dam, welding turbines, resurfacing turbine distributors, rewinding generators and rewinding transformers. The rewinding of generators and transformers are replacements; therefore, deferred maintenance, as used by the company, includes deferred replacements. In certain instances the company has charged additions to plant to the reserve. By deferred maintenance is usually meant the amount that would have to be expended to bring the plant to the highest standard of condition. It would cover all ordinary repairs.

Q. Does the depreciation cost include deferred maintenance, either in the annual expense or accumulated depreciation? A. No, but it does cover the cost of items which are retired and replaced as well as items which are retired and not replaced.

Q. What would be the result of charging maintenance to the depreciation reserve? A. The result would be to capitalize operating expenses.

Q. Have you made a study of working capital of Pennsylvania Water & Power Company? A. Yes, on a consolidated basis.

[1148] Q. And by that I assume you mean to include the Susquehanna Transmission Company of Maryland? A. Yes.

Q. Have you prepared an exhibit containing the results of your studies? A. I have.

[1166] **GEORGE H. DAVIS,**
a witness produced on behalf of the Federal Power Commission, being first duly sworn, testified as follows:

DIRECT EXAMINATION.

By MR. GOLDBERG:

Q. Please state your full name. A. George H. Davis.

Q. What is your occupation? A. Electrical Engineer.

Q. Are you employed by Federal Power Commission? A. Yes.

Q. What is your present position? [1167] A. I am employed as an engineer engaged in the investigation of rates, in the Division of Rates and Certificates.

Q. How long have you been employed by Federal Power Commission? A. Since April 1943.

Q. What has been your professional education? A. I was graduated from the University of Maine in 1901 with a degree of Bachelor of Science in electrical engineering and spent the following year as a part-time instructor in the Electrical Engineering Department, and taking graduate courses in engineering.

Q. What has been your experience before coming to Federal Power Commission? A. After 2½ years testing electrical machinery at the Schenectady Works of General Electric Company, a year under civil service appointment with the War Department as electrical engineer at Vancouver Barracks, Washington, and two years with Portland General Electric Company, on construction and operation in Portland and Salem, Oregon, I was employed from 1908 to 1928 by the Idaho Power Company and its predecessors, with headquarters at Boise, Idaho.

Q. What was the nature of your work during that period? A. I was engaged in practically every phase of electric utility operation, holding successively such positions [1168] as meter tester, superintendent of distribu-

tion, division manager, general superintendent of operation and valuation engineer.

This last position was connected with a special assignment on the inventory and appraisal of the company's entire system. Following this, I was given another special assignment to participate as Rate Engineer in a general rate case before the Public Utilities Commission of Idaho.

Q. What was the nature of your work as rate engineer? A. That work involved the preparation of cost studies, the design of rates, the preparation and presentation of exhibits and testimony before the State Commission and later before the Federal District Court.

Q. After leaving the Idaho Power Company, where were you employed? A. I was employed for four years by Electric Bond and Share Company, in New York, where my work consisted of cost and rate studies connected with the various subsidiary operating companies, consulting with members of the operating staffs and assisting them in problems of rate design, [1169] cost analyses, studies of operating results and allied problems.

Q. Where were you next employed? A. In 1932 I was employed by the receivers for the Middle West Utilities Company and later by the reorganized company in Chicago where I was engaged with problems very similar to those in my previous work, having to do with utility operating companies in various parts of the country under widely varying conditions.

Q. What has been the nature of your work with Federal Power Commission? A. I was appointed to the staff in April 1943 as a rate investigator and was engaged in the analysis of large power contracts, in connection with war production. This was for the purpose of determining the reasonableness of the rate and involved cost studies and rate surveys.

Q. Who is your immediate supervisor? A. Stanley W. Roland, Head of Electric Rate Investigations Section.

Q. Is your work assigned by Mr. Roland? A. Yes.

Q. What was your assignment in connection with this proceeding? A. First, to make a complete study of the contracts under which Holtwood sells the output of its plants and [1170] purchases and interchanges energy with other companies. The digest of these contracts which I have prepared is included in the operating report which has been placed in evidence here as Exhibit 47.

Next, to make an analysis of the total capital cost and operating expense of Holtwood and Susquehanna for the year 1944, with an allocation of those costs to the customers being supplied and a comparison of such allocated costs with the charges collected for service for that year.

Q. When you say Holtwood and Susquehanna, what do you mean? A. In my testimony, I refer to Pennsylvania Water & Power Company as "Holtwood" and to The Susquehanna Transmission Company of Maryland as "Susquehanna."

Q. Have you prepared an analysis and allocation of the total costs of Holtwood and Susquehanna? A. Yes.

Q. What are the sources of the information used in your study? A. The basic figures used in my cost analysis, consisting of the rate base, operating expenses, taxes and depreciation for the year 1944 I secured from the accounting examiners of the Commission's staff which figures have been presented in evidence here. The sales and engineering and operating data used are those contained in the annual reports FPC [1171] Form 1, and the Power System Statements FPC Form 12, which have been submitted to the Commission by Holtwood and other companies in the interconnected system serving Federal Power Commission Power Supply area 6.

I have received additional information furnished by Holtwood at the request of the Commission's staff, including complete billing data by months for Holtwood's customers, monthly generation of energy at Holtwood and

Safe Harbor, and monthly transfer of energy over the various transmission lines.

I have visited the Holtwood plants and talked with the operators, particularly concerning the meters and records of measurement on the various outgoing circuits. I have also visited the system load dispatchers' office in Baltimore and examined the metering arrangement.

I have consulted with Mr. Spaulding and Mr. Von Eiff, Interconnection Engineer, and their associates of Holtwood, concerning methods of operation, the interpretation of contracts and costs of production and transmission. In company with Mr. Roland, I consulted with Mr. R. T. Greer, of Baltimore Company, who is in charge of the operations of the interconnected system, concerning the capacity value of the hydro plants to the Baltimore system.

I have examined cost studies made jointly by Holtwood and Baltimore Company. From my study of the contracts, under which Holtwood disposes of its entire output and purchases [1172] $\frac{1}{2}$ of the output of Safe Harbor, I have obtained information concerning the relations of Holtwood with its customers in Pennsylvania, with Baltimore Company and with Safe Harbor. Information as to methods of operation, the use of special facilities, metering and delivery points for firm power and interchange, has also been obtained from these contracts.

Q. What do you mean by Federal Power Commission Power Supply Area No. 6? A. Area 6 includes the Holtwood, Safe Harbor, Baltimore, and Washington systems, but not the systems of Holtwood's customers in Pennsylvania.

Q. When you speak of Holtwood's customers, to whom do you refer? A. There are five customers who receive all of Holtwood's available firm power. These customers are—

Pennsylvania Power & Light Company, Philadelphia Electric Company, Edison Light & Power Company, Penn-

sylvania Railroad Company in Pennsylvania, and Baltimore Company.

Sales to the Pennsylvania Power & Light Company represent the requirements of its Lancaster District. Sales to the Philadelphia Electric Company represent the requirements of Coatesville and adjacent territory. Sales to the Edison Light and Power Company represent 40 per cent of the requirements of the City of York. Sales to the Pennsylvania Railroad Company represent the requirements in Holtwood's [1173] service area in Pennsylvania, and sales to Baltimore Company represent the balance of the dependable capacity available from the Holtwood system, and the balance of the energy that would be available from that system in a year of average river flow.

Q. Has there been any change in the agreements with these customers since 1944? A. Yes, the contract with Edison Light & Power Company for the supply by Holtwood of a part of the requirements of York, Pennsylvania, and the contract with Metropolitan Edison Company for interchange, was canceled as of Dec. 31, 1945.

A new contract was executed between Holtwood and Metropolitan Edison Company for the supply of firm power by Holtwood and economy interchange between the two systems. Under the new contract, Holtwood has no direct relation with Edison Light and Power Company. My study is based on the conditions of 1944, and includes the service supplied to Edison Light & Power Company as reported for that year.

Q. Please outline briefly the method used in your analysis? A. The study consists of six principal steps. One, analysis of plant in service, and the assignment of facilities used primarily for service to one customer directly to that customer, and the assignment to a pool for later allocation of those facilities that are jointly used for [1174] the service of all customers.

Two, analysis of depreciation reserve, working capital, materials and supplies, in order to develop the rate base in

accordance with the assignments of plant in service to individual customers and the pool.

Three, analysis of operating expenses on the same basis as plant and rate base.

Four, assembly of total costs, including operating expense, taxes, depreciation and return in accordance with the assignments to individual customers and the pool.

Five, allocation of pool costs to capacity and energy components and development of unit capacity and energy costs.

Six, application of unit costs to customers measured loads, assembly of special facility and pool costs for each customer and a comparison of total cost of each customer's service with charges collected for that service in 1944.

These six steps of the study are set up in an exhibit consisting of tables showing the results of each step, with supporting schedules showing details of the important items.

MR. GOLDBERG: May we have marked for Identification, Mr. Examiner, a document entitled, "Pennsylvania Water & Power Company, Cost Allocation" as Exhibit 64.

TRIAL EXAMINER: It will be marked 64 for Identification.

(A document is marked Exhibit 64 for Identification.)

[1175] By MR. GOLDBERG:

Q. I show you Exhibit 64 for Identification. Is that the exhibit to which you have just referred? A. It is.

Q. Coming back to the first step, the analysis of plant in service; please identify and explain your assignment of the principal items of plant? A. This analysis of plant is shown in Table I of Exhibit 64. The entire production plant consists of equipment jointly used for service to all customers and is assigned to the pool, as shown in line 3, column 6 of Table I. Some items of transmission plant

are devoted almost exclusively to the service of one customer and are assigned directly to that customer. In this group are the Highlandtown Substation, the Holtwood-Highlandtown Line and the Baltimore Gunpowder Line, which are for all practical purposes, used exclusively for service to Baltimore and are assigned directly to Baltimore Company. These items are shown on lines 4, 5 and 6, column 5 of Table I.

The line from Holtwood Substation to Coatesville, Pennsylvania and the switching facilities at Newlinville Substation in Coatesville are assigned directly to Philadelphia Electric Company as indicated in column 2, Table I.

Four small items consisting mostly of switching stations connections to the Holtwood-Lancaster Line and metering [1176] equipment are assigned directly to Pennsylvania Power & Light Company, as shown by items in column 1, of Table I. The 220 kv lines from Safe Harbor to Baltimore serve more than one purpose.

During the four or five months of high river flow they are used principally for the benefit of Baltimore Company, to transmit Safe Harbor power to Baltimore; during the two or three months of extreme low flow they serve principally to transmit energy from Baltimore to Safe Harbor, to make up the deficiency in Holtwood's supply to its Pennsylvania resale customers and to the Pennsylvania Railroad Company.

During the balance of the year, they are used to transmit energy alternately in each direction; from Safe Harbor to Baltimore during the day to help carry Baltimore Company's peaks; and from Baltimore to Safe Harbor during the night to carry the Pennsylvania loads while the hydro plants store water.

The cost of these lines should therefore, be assigned partly to the pool to represent their joint use for service to all customers, and the balance directly to Baltimore Company to represent that part of their use for Baltimore Company's service alone. The exact proportion is

not mathematically determinable but the joint use for customers other than Baltimore is obviously the smaller part. This joint use consists of supplying the deficiency in Holtwood's [1177] available energy during extreme low water seasons and in supplying energy to the Pennsylvania customers during off-peak periods of other seasons to permit the storing of water at the hydro plant.

Considering these conditions, I have assigned 2/3 of the investment in these lines directly to Baltimore service and 1/3 to the pool, as indicated on lines 7, 8, 9, 10 of Table I.

I believe this to be in reasonably close accord with the proportion of use.

The Conestoga substation at Safe Harbor and the line from this substation to Perryville, Maryland, are used for service to the Pennsylvania Railroad Company in both Pennsylvania and Maryland.

In 1944, 39 per cent of the energy supplied from Safe Harbor through this substation and line was delivered to the Railroad Company in Maryland, for the account of Baltimore Company. 39 per cent of the investment in these facilities is, therefore, assigned to Baltimore Company, and the balance to the Pennsylvania Railroad Company, as shown on lines 11, 12, and 13 of Table I.

The line from Holtwood to the Violet Hill substation at York, Pennsylvania, is also used for more than one purpose. It supplies a portion of the firm requirements of Edison Light & Power Company at York, and also serves as a tie between [1178] Holtwood and Metropolitan Edison Company, for the interchange of energy which latter is a joint use for service to all of Holtwood's customers. The cost of this line is assigned 29% to Edison Light & Power Company, and the balance to the pool on the basis of the energy transmitted, for the two purposes. The substation at York is assigned directly to Edison Light and Power Company on the basis of its use for that customer alone.

The balance of transmission plant consisting of the Holtwood Substation, the Holtwood-Safe Harbor line and miscellaneous items of jointly used facilities are assigned to the pool as shown on line 22 of Table I.

After these direct assignments, there remain some items of intangible and general property shown on lines 24 and 25 which I have assigned to the pool.

The totals of the six groups as thus assigned give the total classified plant in service as shown in line 26 of Table I.

Q. What is the second step? A. Having the total plant in service classified as set up in Table I the next step is to develop the rate base in accordance with the same classification, by deducting depreciation reserve and adding an allowance for working capital to each group of plant investment. This classification is set up in Table II.

Q. How is the depreciation reserve classified? [1179] A. The amount of depreciation reserve applicable to each group in the classified plant is computed on the basis of years in service and the rate indicated by the estimated service life. These amounts, I secured from the Staff's accounting examiner and they are shown in line 3 Table II and on line 3, are shown the amounts of net investment for each group of property obtained by deducting depreciation reserve from the amounts of plant in service.

Q. When you stated you had secured the amount in line 3 from the Staff's accounting examiners, I think you meant to say line 2 rather than line 3, is that right? A. That is right. I beg your pardon. The depreciation reserve which was deducted are the amounts which I secured from the accounting examiners.

Q. And they appear in line 2 of Table II? A. Yes, sir.

Q. How is working capital determined? A. Cash working capital is estimated at 12.5 per cent of operating

expenses, exclusive of purchased power. The total amount thus derived is allocated to the classified plant groups in proportion to the operating expense of each group, exclusive of purchased power. The ratios of operating expense of each group to the total operating expense are shown on line 26 of Table III.

Q. Do you mean line 26? [1180] A. That line is changed to 19.

Q. In other words, when you said line 26, you meant line 19? A. Line 19, yes.

Q. Now go on. A. Materials and supplies, after eliminating fuel and other items belonging to the pool, are allocated to the classified plant in proportion to the investment in each group. The amounts of working capital allocated to the property groups are shown on lines 4 and 5 of Table II and on line 7, is shown the classified rate base obtained by adding working capital to the net investment.

Q. In your third step the analysis of operating expenses, please explain the principal items? A. Operating expenses are classified into the same groups as the items of plant; that is, the expense assigned to each group is that involved in the operation and maintenance of the facilities and equipment already assigned to that group. The operation and maintenance expenses of the individual lines and substations are assigned directly to the customers, in accordance with the previous assignment of investment. This classification is shown on Table III.

Q. How do you determine the operation and maintenance expense of a particular line or substation? A. The operation and maintenance expense of each line [1181] is shown in Holtwood's report to the Commission, FPC Form 1. The operation and maintenance expenses of individual substations were made available at the request of the Commission's staff. The actual operating expense of the switching stations at Newlinsville Substation, in Lancaster, Donegal Substation, Donegal Tap near Safe Harbor,

Engelside Substation, Manheim and South Akron are not kept separately in Holtwood's accounts, and in this study have been estimated at 2 per cent of the investment.

Q. In Table III of Exhibit 64 why do you show production cost exclusive of purchased power? A. Group totals are obtained without this item for the purpose of obtaining ratios for allocating cash working capital and some items of taxes which are not affected by purchased power.

Q. You show \$1,789,874 in Table III as the total operating expense, exclusive of purchased power. Is that the total operating expense of Holtwood and Susquehanna? A. Yes, but that is not the way the company reports it. The total operating expense as reported by Holtwood for 1944 is \$2,579,099. The actual expense for which detailed items are reported is \$3,207,966. This is reduced in the company's report by a credit of \$628,867, representing revenue received from the net interchange of energy with customers in Pennsylvania.

[1182] The reported expense also includes the total cost of Susquehanna, which contains an amount of \$128,776 for taxes and \$65,060 for depreciation. These amounts are combined with the respective amounts of taxes and depreciation expense of Holtwood, and are deducted from the total actual operating expense. An item of \$9,703 designated "miscellaneous credits" in the computation of Holtwood's bill to Baltimore Company is also deducted, which leaves \$1,789,874 as shown on Table III. The reconciliation of this amount with the total expense, as reported by Holtwood, is set up in Table III-A.

Q. Coming now to the fourth step, the assembling of total costs, please explain the important items? A. Total costs are assembled under the same classification as that used for plant, and this classification is shown in Table IV. There are five main items:

(a) The operating expenses as classified in Table II, and shown on line 1 of Table IV.

(b) Purchased power, shown on line 2, is 1/3 of the Safe Harbor bill as adjusted by the Commission's accountants, and is assigned entirely to the pool.

Q. Is that line 2 of Table IV? A. Yes.

Q. Proceed. A: (c) Taxes are classified into four groups:

(1) Property and capital stock taxes.

[1183] (2) Old age and unemployment insurance.

(3) Gross receipts and PUC assessment.

(4) Federal and State Income Taxes.

Groups 1 and 4 are allocated to customers and to the pool in proportion to investment.

Group 2 is allocated to customers and to the pool in proportion to operating expenses.

Group 3 is allocated entirely to customers in proportion to gross revenue collected from each.

The total of the groups thus allocated constitute the next item, which is line 3 of Table IV.

(d) Depreciation expense is computed for each item of equipment in the classified plant at the respective rates indicated by the estimated service life of each, and these amounts are totaled for each customer and the pool, and shown on line 4 of Table IV.

(e) The last item is return on the rate base at 5 per cent, which is computed for each customer and the pool from the classified rate base in Table II.

[1184] Q. Mr. Davis, after you have assembled the total costs of service, what is the next step? A. The total costs of special facilities having been allocated respectively to the customers for whose service they are used, the next step is to allocate to the several customers on the basis of use, the cost of jointly used facilities in the pool. To do this, I have first classified all pool costs into production and transmission costs, dividing production into hydro and

steam and again dividing steam production expense into fixed and variable items.

This allocation is shown in Table V. In this classification of the pool costs, I have started with Plant in Service and followed the same procedure as with the special facilities, allocating depreciation reserve and working capital and setting up the rate base for each property group, as shown in lines 1 to 12, of Table V. I then assembled total costs for these groups in the same way as for the special facilities assigned directly to customers. This classification is shown on lines 13 to 20 of Table V.

Q. What are the items assembled in the total classified pool costs? A. They are the same items that were assigned to the pool in Table IV; namely, operating expense, taxes, depreciation and return.

[1185] Operating expenses are assigned directly to the facilities in each group as shown on line 13 of Table V and in the case of steam production the cost is divided into fixed and variable costs. Taxes, as shown on lines 15 and 16 are allocated to the four groups of pool facilities in the same way they were allocated to individual customers. Items of Property, Capital Stock, and Income Taxes, are functions of investment; Retirement and Unemployment Insurance are functions of operating expense, and these items are allocated respectively in proportion to plant investment and operating expense of the four groups.

Depreciation expense is computed for each group of facilities in accordance with the rate indicated by the estimated service life. Return is computed at 5 per cent of the rate base for each group. Purchased power, representing the cost of Holtwood's one-third share of Safe Harbor power, as such cost has been adjusted by the accounting examiners, is shown on line 19 and is added to Holtwood's hydro production cost. The totals of these four groups are the total pool costs. Hydro production and transmission costs are considered fixed costs and steam production is divided into fixed and variable costs.

Q. Do you show fixed and variable costs of steam production in Table III? A. They are not identified as such, but the cost [1186] of fuel, water and maintenance of boilers, boiler plant equipment, and coal handling equipment are selected as the significant items, varying with the energy output of a steam plant and are classified in Table V as variable costs. All other steam production costs are classed as fixed costs. Detail of this classification is shown in Table V-c.

Q. Is this the generally accepted method of classifying steam production costs? A. I don't know that you would call any method "generally accepted." The expenses which I have classed as variable are the ones which primarily are a function of plant output although they may be affected to some extent by the installed capacity of the plant. Other items of expense which primarily are a function of the capacity of the plant are in turn affected to a slight extent by plant output. Some methods of allocation, therefore, go into minute detail, dividing nearly every item of plant expense between fixed and variable components on ratios which are partly empirical and partly based on judgment. Unless a plant is operated under laboratory test conditions, much of the data necessary for such an allocation are not directly available and judgment becomes the major factor in the allocation. The classification which I have used in this study is a close approximation and I believe it does not omit any detail [1187] which would materially change the final result.

Q. Why should purchased power be classed with the hydro plant costs? A. The Safe Harbor bill is made up of the same type of items as are included in the hydro costs already assembled, being one-third of the total cost of the Safe Harbor plant. This cost should be treated in the same way as the Holtwood hydro group in further allocation.

Q. What further allocation have you made of these four groups of pool costs? A. These costs are next

reclassified into capacity and energy components from which unit costs per kilowatt of capacity and per kilowatt-hour of energy may be derived. This reclassification is shown on lines 21 to 25 of Table V.

Q. What is the basis of this allocation? A. First, all variable costs are placed in the energy component and the steam production fixed cost group in the capacity component.

Q. Is there a particular reason for this? A. As already described, these costs were classified as fixed and variable on the basis of the predominance of plant capacity or of energy output in the factors which determine the amount. I am now attempting to classify all costs on the basis of the function to which the various costs primarily are devoted; that is, whether that of [1188] providing capacity or of supplying energy, which is the same basis on which fixed and variable costs of steam production were classified.

Q. Are costs which may be called variable the only ones which you allocate to the energy component? A. No, there are other considerations indicating the function for which fixed costs are incurred.

Q. What are such considerations? A. We have a good example right here in the case of the Holtwood and Safe Harbor hydro plants. At both of these plants, generating capacity has been installed considerably in excess of the dependable capacity available.

Q. How do you determine how much dependable capacity is available? A. Studies are made by the company at the end of each year to determine how much capacity these hydro plants at Holtwood and Safe Harbor can be expected to provide on the estimated load curve of Federal Power Commission Power Supply Area No. 6 for the following year or in other words, how much the hydro plants will be able to reduce the steam capacity that would otherwise be required to carry next year's load.

Q. What is the basis of these estimates of dependable capacity? A. These estimates are made on the basis of "Most Adverse Flow Conditions" and on "Average or Median Flow [1189] Conditions," and are included in the Power System Statements, FPC Form 12, filed each year with the Commission.

In this allocation, I have used the dependable capacity estimated by the Company for the month of December under adverse flow conditions. The computation of dependable capacity is based on a regular weekly cycle of drawdown and refill of the Safe Harbor pond which requires that the water be up to maximum level every Monday morning. The additional capacity which could be made available in case of emergency by use of this storage in excess of the regular weekly cycle, is also computed.

The dependable capacity reported for December with weekly refill of Safe Harbor pond is 197,000 kilowatts for the combined hydro plants. The excess available by further use of Safe Harbor storage is computed at 57,000 kilowatts. This additional capacity is used only in case of emergency and obviously is of a different quality from capacity under a weekly recovery program. It would be quickly exhausted by a continued emergency and with low river flow would require considerable time for storage replacement. It appears, therefore, that while it does not have the full value of capacity available under normal operation of the storage pond, it is available in case of need and should be credited with some value in this allocation. I have taken the total dependable capacity to be 197,000 kilowatts as reported for weekly [1190] recovery operation, plus one-half of the additional 57,000 kilowatts of storage capacity or a total of 225,500 kilowatts.

Q. How do you use this in determining capacity and energy cost components? A. I have taken this 225,500 kilowatts as the portion of the installed capacity which can be considered as available for providing capacity to firm power customers. The balance of the installed capacity,

or 96,000 kilowatts is the portion which can be considered as installed for the primary purpose of producing additional energy during periods of high river flow.

The installed capacity, or machine capability of the two hydro plants is 334,000 kilowatts. 225,500 kilowatts devoted to providing capacity is 67.5 per cent of the total and on this basis 67.5 per cent of the total hydro cost is allocated to the capacity component and 32.5 per cent the energy component.

Q. In determining the proportion of installed capacity which can be considered firm, why do you include the Safe Harbor plant? A. Dependable capacity is estimated and reported only for the combined hydro plants of Holtwood and Safe Harbor. Holtwood has purchased under contract one-third of Safe Harbor capacity and output. The dependable capacity of Safe [1191] Harbor alone is determined by prorating the aggregate dependable capacity of the two plants in the ratio that the installed capacity of Safe Harbor bears to the installed capacity of the two plants. Holtwood's share of Safe Harbor dependable capacity is obtained by taking one-third of the amount prorated to Safe Harbor.

Q. What other pool costs are included in this reclassification? A. Transmission cost is the only remaining item and that is allocated entirely to the capacity component. This gives a total capacity component of \$2,782,719 and a total energy component of \$1,412,971 as shown on line 25 of Table V. From the total capacity cost and the total customers load supplied by the plant, a unit cost per kilowatt of capacity is derived. From the total energy cost and the energy delivered to customers, a unit energy cost is derived. From these unit costs and the measured loads of Holtwood's customers, the allocated cost of supplying each customer is derived.

Q. How have you determined the capacity from which you develop a unit cost per kilowatt? A. This unit cost is based on the aggregate noncoincident load delivered to

the customers' meters; that is, the sum of the annual maximum demands of all customers regardless of when each occurred.

Q. Why do you use noncoincident demand? [1192]
A. Because it is intended to apply the unit cost thus developed to each customer's maximum demand for the year, and this unit if it is thus applied to the demand of every customer will obviously allocate the total amount of capacity cost, and will allocate it to each customer in proportion to his maximum capacity requirement rather than to his requirement at the particular time the system peak occurs.

Q. Is that, in your opinion, an equitable method of allocating capacity costs to the customers served by Holtwood Company? A. I believe it is equitable because in this way the benefits of all the diversity there is between customers' demands is distributed equally among the customers.

Q. How is this total noncoincident demand determined?
A. The maximum demands of the three wholesale customers in Pennsylvania are directly measured. The maximum demand of the Pennsylvania Railroad, in Pennsylvania, is measured in combination with its demand in Maryland. The capacity available for Baltimore Company is not a measured quantity, but is the residuum of the total available dependable capacity after all firm power customers' demands are supplied and must, therefore, be determined by a process of elimination. This process is summarized in Table V-A.

Q. Will you please describe this process? A. I have already discussed the dependable capacity [1193] of the hydro plants made up of 197,000 kilowatts available under a weekly recovery cycle plus $\frac{1}{2}$ of the 57,000 kilowatts additional capacity available from the use of Safe Harbor pondage, making a total of 225,500 kilowatts which is available for the system peak in Federal Power Commission

Power Supply Area 6, and is 67.5 per cent of the total installed capacity.

In addition to the hydro capacity, the Holtwood Steam Plant has an effective capacity of 26,000 kilowatts, all of which is considered dependable due to the ample opportunities for scheduled maintenance. This makes a total dependable gross generating capacity of 251,500 kilowatts.

Deducting the reported station use and transmission loss at the time of system peak of 23,000 kilowatts, leaves a net dependable capacity of 228,500 kilowatts. This is shown on line 12 of Table V-A, together with the amounts for Holtwood and Safe Harbor hydro plants prorated on the ratio of installed capacity. The requirements of the three resale customers in Pennsylvania at the time of system peak was 84,000 kilowatts and that portion of the Pennsylvania Railroad Company requirements delivered in Pennsylvania which is considered to be furnished by Holtwood, and for which Holtwood collects the charges was 28,397 kilowatts.

This is the Pennsylvania portion of the total Pennsylvania Railroad demand based on the proportion of the total [1194] energy that is delivered in Pennsylvania. This makes a total Pennsylvania customer demand at the time of system peak of 112,397 kilowatts which must be supplied out of Holtwood's dependable capacity before any is available for Baltimore.

To translate customer's maximum loads into required station capacity, consideration must be given to the necessary reserves to insure dependable service. A reserve capacity of 10 per cent to 12 per cent is generally considered adequate with a tendency toward lower amounts for larger systems and power pools. Using 10 per cent as a reasonable reserve gives a required capacity of 123,637 kilowatts to furnish dependable service to the Pennsylvania resale customers and to the Railroad load in Pennsylvania. Deducting this required capacity of 123,637 kilowatts from the total dependable capacity of 228,500 kilowatts leaves

104,863 kilowatts of dependable capacity available for Baltimore and the Railroad load in Maryland. By prorating the net dependable capacity of both Holtwood and Safe Harbor hydro plants in proportion to the installed capacity in each, the Safe Harbor portion is determined to be 141,065 kilowatts. Deducting Baltimore Company's two-thirds of this from the balance available from both plants, leaves 10,820 kilowatts of dependable capacity available to Baltimore from Holtwood's plant, plus its 1/3 share of Safe Harbor.

Q. How is this 10,820 kilowatts used in allocating [1195] capacity costs to the customers served by Holtwood Company? A. This 10,820 kilowatts is taken to be the maximum capacity furnished during the year 1944 to Baltimore Company by Holtwood.

Q: Did the load delivered to Baltimore never exceed this amount? A. It was much greater during the months of high river flow, but that was not firm power and could not be depended on to serve firm power loads.

The larger load during periods of high river flow constitutes the use of the excess installed capacity to produce the greatest practicable amount of energy from the available water. This 10,820 kilowatts was all the dependable capacity that Holtwood had left to deliver to Baltimore at the time when Baltimore Company's need for capacity was greatest and when, if Holtwood's capacity had been available, it would have drawn its maximum demand. For the purpose of allocating capacity cost to the service furnished by Holtwood to Baltimore Company, this 10,820 kilowatts is comparable to the maximum annual demands of the Pennsylvania customers, and is included with such demands to determine the aggregate noncoincident demand of all customers on which to base a unit capacity cost. These noncoincident demands totaling 144,780 kilowatts are shown in Table V-D.

Q. What are the annual unit costs per kilowatt [1196] of capacity and per kilowatt hour of energy? A. The

total cost allocated to the capacity component in Table V is \$2,782,719 and dividing this by the aggregate noncoincident demand of 144,780 kilowatts gives a unit cost per kilowatt of \$19.22 per year.

The total energy sales to Pennsylvania customers and the balance available to Baltimore from Holtwood's plants, plus its 1/3 share of Safe Harbor energy in a year of average river flow is 988,166,756 kilowatt hours. Dividing the total energy cost of \$1,412,971 by the total energy gives us a unit cost per kilowatt hour of 1.43 mills.

The sources of energy generated in 1944 and the disposition of this energy are shown in Table V-B. To the total amount of energy available in 1944 is added 104,182,056 kilowatt hours which is the estimated additional amount of energy that would be available to Baltimore Company in a year of average river flow. The sales to resale customers and to the Pennsylvania Railroad Company in Pennsylvania, with the balance available to Baltimore Company adjusted to an average water year, are shown in Table V-D.

Q. What result do you obtain by the application of these unit costs? A. The application of unit costs to the demand and energy of each customer to determine the total cost of power and energy supplied is shown in Table VI. The total costs of [1197] special facilities provided for each customer, as developed in Table IV, are added to the capacity and energy costs, as derived from the unit costs, to get the total Holtwood Company costs. To these totals are added the cost of energy supplied by Baltimore.

Q. What energy is supplied by Baltimore? A. Holtwood is not able to meet its firm power obligations from its own plants during the low water months and the deficiency is made up at times by energy delivered from Baltimore to Safe Harbor over the 220 kilovolt lines. During 1944 Baltimore furnished a total of 125,317,000 kilowatt hours to Holtwood. No charge was made for this energy. The cost of producing and delivering it, however, is a part of the cost of supplying the firm power requirements of

Holtwood's customers and is added to Holtwood's energy cost at 4 mills per kilowatt hour or a total amount of \$501,268.

This cost is allocated to each customer in proportion to the energy delivered or available and the total amount is credited to Holtwood's cost of furnishing services to Baltimore.

Q. How is the rate of four mills determined? A. The average production cost of Baltimore Company in 1944 was 4.6 mills and the incremental cost, including only fuel, water and maintenance of boiler and coal handling plants was 3.4 mills. A cost of 4 mills is considered reasonable [1198] for making up the deficiency in the supply of energy to Pennsylvania customers.

Q. What is the final result of your determination of total costs applicable to the several customers? A. After deriving the total cost of furnishing the service to each customer, a comparison of these costs is made with the charges for such service in 1944. This comparison shows a total revenue in excess of allocated cost of \$2,720,264, of which 73.7 per cent is applicable to Baltimore, 8.4 per cent to Pennsylvania Power & Light Company, 5.9 per cent to Philadelphia Electric Company, 0.9 per cent to Edison Light & Power Company and 11.1 per cent to Pennsylvania Railroad Company for service in Pennsylvania?

Q. Are the charges shown in Table VI the actual bills rendered to these customers by Holtwood Company? A. They are the actual bills in every case, except for service to Baltimore. In this case, two items are included in addition to the bill rendered by Holtwood.

Q. What are these items? A. First, an amount of \$628,876, which is the net revenue received by Holtwood from interchange sales in Pennsylvania, and second, an item of \$133,750 which is revenue received from the Conowingo Companies for the addition of 8.5 feet to the elevation of Conowingo forebay, which raises the level of the Holtwood tailrace a corresponding [1199] amount.

RECORD

P.422-497

Q. Why should these items be included in the revenue received from Baltimore? A. Under the contract with Baltimore Company, Holtwood sells the entire residual capacity and energy of its plant, plus its one-third share of Safe Harbor capacity and energy after the firm power requirements of its Pennsylvania customers have been supplied. The energy sold in interchange to customers in Pennsylvania, without firm commitment, was a part of the residuum belonging to Baltimore Company, and was sold with the consent or at the request of Baltimore Company. It was in effect, therefore, a sale by Baltimore Company and the revenue was turned over to Holtwood. The revenue is accordingly added to that collected directly by Holtwood from Baltimore Company.

Q. How is this interchange energy accounted for in your cost allocation? A. It is included in energy sold to Baltimore Company just as if it had actually been delivered to the Baltimore system.

Q. What is the second item in addition to the actual bill rendered to Baltimore Company? A. It is a payment of \$133,750 received from Conowingo Companies in compliance with an agreement under which Holtwood allowed the water of the Conowingo Pond to be backed up 8.5 feet [1200] above the level claimed by Holtwood as its tailrace level.

Q. How do you explain the inclusion of this payment in the revenue received from Baltimore? A. This agreement to raise the head of the Conowingo pond at the expense of the head at Holtwood's hydro plant constitutes a sale of a part of the potential capacity of the Holtwood plant, which would otherwise have been available to Baltimore Company. It is, therefore, a part of the residual plant capability to which Baltimore Company is entitled and for which Baltimore Company would otherwise have been obliged to pay. This, therefore, is in effect, a sale by Baltimore of a part of its entitlement from Holtwood's capacity and the money received is turned over to Holtwood.

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[1201]

CROSS-EXAMINATION.

By MR. MYSE:

[1203] Q. With respect to Table V, I think you testified that the amount of \$992,535 recorded in line 19 as purchased power was adjusted by the accounting examiners. What is the nature of that adjustment you referred to? A. That was a computation of the costs of Safe Harbor on—I am informed by the accounting examiners—on the same basis as the cost that the Holtwood plant is computed as presented here.

Q. Do those costs appear in any exhibits presented to date in this proceeding? A. I could not answer that. The figure was given to me by the accounting examiners.

Q. Which accounting examiners? A. Mr. Dunn.

MR. MYSE: May I ask counsel for the Commission, have those figures been presented in any exhibits to date?

MR. GOLDBERG: I am just trying to consult with Mr. [1204] Dunn. You are referring, Mr. Myse, are you, to line 19, Table V?

MR. MYSE: Yes.

MR. GOLDBERG: Mr. Dunn informs me that that appears in the consolidated income statement, Exhibit 60 on schedule 5 on page 27 of that exhibit.

By MR. MYSE:

Q. Well, then, Mr. Davis, as I understand it, the figure of \$992,535 does not represent the actual bills rendered by Safe Harbor in 1944 to Holtwood? A. It does not.

[1205] Q. Explain a little what you mean by the Holtwood service area in Pennsylvania? A. The railroad load is accounted for and charged for by Holtwood and Baltimore on the basis of the energy delivered in Pennsylvania and

Maryland. I have used that division to indicate service area so far as the railroad load was concerned.

Q. Then, as I understand it, you define Holtwood's service area for the railroad load as all the area in Pennsylvania, is that right? A. Yes.

* * *

[1207] By Mr. MILLER:

Q. Your study reflects factual conditions in the year 1944 only and does not apply either to the year 1943 or the year 1945, is that correct? A. Yes.

Q. And of course it does not apply to the year 1946?
A. No.

Q. Your approach if applied to different years would produce different results, according to the variation of many factors, among such factors being the river flow of the Susquehanna River, is that not correct? A. I have attempted to compensate for the variations in the river by using the energy that is estimated as available in an average year as reported by Holtwood.

Q. That appears in Table V-A, is that correct?
A. Yes, I have added there 104,182,000 kilowatt hours which they estimated would be an additional amount available for Baltimore in an average year.

Q. If contract commitments between the Holtwood Company and the customers have changed since 1944, your results are no longer applicable to such changed conditions, [1208] are they? A. Any change in the sales in Pennsylvania, of course, would mean more capacity used in Pennsylvania—any increase, I should say of sales in Pennsylvania would mean more capacity used in Pennsylvania and less balance available for Baltimore or vice versa.

Q. And your results would change according to the changes in contractual commitments? A. That is right.

* * *

[1211] MR. HULL: With respect to the revised exhibit in connection with the testimony of Dr. H. B. Dorau.

I call your Honor's attention to the fact that in connection with the testimony of Dr. H. B. Dorau, he heretofore offered an Exhibit 33, which was rejected.

However, counsel for the staff, Commission's staff, [1212] indicated, at transcript page 841 lines 4 to 15, that he had no objection to the first chart and to the first two tabulations of that exhibit.

And Your Honor, at transcript page 842, line 20, running over to page 843, line 18, indicated that if those three documents, the first chart and the two tabulations, were prepared as a separate exhibit and offered they would be received.

We have now prepared a document which I ask to be marked for identification as Exhibit No. 65, bearing this title: "Before The Federal Power Commission—In the Matter of Pennsylvania Water and Power Company and Susquehanna Transmission Company of Maryland IT-5195—Exhibit of Dr. H. B. Dorau Relating to the Supply of Money and the Value of the Dollar." This exhibit which we asked to be marked as Exhibit No. 65 contains the chart and the two tabulations that we have heretofore referred to, and we now offer them in evidence.

MR. GOLDBERG: Am I to understand that this exhibit is being offered in relation to the testimony of Dr. Dorau.

MR. HULL: In conjunction with the testimony.

MR. GOLDBERG: In other words, am I to understand that this testimony is in relation to Exhibit 65?

MR. HULL: That is correct.

MR. GOLDBERG: As I understand, the offer is not intended to relate to the determination of rate base or any of the other elements mentioned by Respondents' counsel when the ruling was [1213] made on Exhibit No. 53—is that the right number? Is that correct?

MR. HULL: 33.

MR. GOLDBERG: 33.

MR. HULL: It is offered for the purpose for which the Examiner said it might be admitted, and you agreed it could be admitted.

MR. GOLDBERG: I agreed it could be admitted as such, as statistics of the purchasing power of the dollar, but I did not agree to its admission if it is intended to be offered in any way to be related to the rate base or rate of return, or any other purpose.

MR. HULL: It is offered in connection with the rate of return,—not in connection with the rate base.

MR. GOLDBERG: In connection with the rate of return you say?

MR. HULL: Pardon?

MR. GOLDBERG: In connection with the rate of return.

MR. HULL: Yes, and any other appropriate use which the Commission may see fit to make of it.

MR. GOLDBERG: Confining myself and guiding myself by the express statement of counsel that he is relating it to these things and without any determination as to how the Commission may intend to use it, I have no objection.

TRIAL EXAMINER: The document heretofore referred to and now handed to the reporter will be marked Exhibit 65 [1214] for Identification.

(A document is marked Exhibit 65 for Identification.)

TRIAL EXAMINER: Before the Examiner concludes his ruling on this exhibit which has now been marked Exhibit No. 65 for Identification is there any other objection by any party present?

(No response.)

Trial Examiner: Hearing no objection, Exhibit 65 for Identification is received in evidence.

[1217] Trial Examiner: The hearing will be in order.

Before we proceed with the testimony, the Examiner would like to inquire as to whether the Intervenors, other than Consolidated Gas Electric Light & Power Company of Baltimore, as to which the Examiner is advised they intend to present testimony, any others intend to present any testimony at this stage of the proceeding; that is, the Examiner will call on the Consolidated Gas Electric Light and Power Company first, and then upon counsel for the Pennsylvania Public Utility Commission, and then upon counsel for the Public Service Commission of Maryland.

At this time those intervenors should be prepared with whatever testimony or evidence they intend to present and offer on direct. Will any of those two counsel have testimony?

Mr. Miller: Mr. Examiner, we will have no direct testimony. We will have testimony in rebuttal we anticipate. I might say, in order to clarify the record as to the Pennsylvania Commission's position, that the Pennsylvania Public Utility Commission has authorized me to state that it denies the jurisdiction of the Federal Power Commission over sales by Respondent, Pennsylvania Water and Power Company, to Pennsylvania customers in Pennsylvania. The bases for this denial are as follows:

[1218] 1. Pennsylvania Water and Power Company is a licensee in legal contemplation since it has filed an application for a license under the Federal Power Act and the Federal Power Commission, taking jurisdiction of that application, has signified that it would

grant a license subject to certain conditions. As a licensee, Pennsylvania Water and Power Company is subject to the rate jurisdiction of the Federal Power Commission under Part I of the Federal Power Act and not under Part II of the Act. Under Part I of the Act, applying to licensees, Federal Power Commission jurisdiction attaches only if and when the states concerned in relation to the transactions involved are unable to agree upon cooperative regulation. Not only is there no showing on the present record that the Commonwealth of Pennsylvania and the State of Maryland are unable through the Public Service Commission of Maryland and the Pennsylvania Public Utility Commission to achieve complete proper and adequate regulation through cooperative procedure, but I can state affirmatively that the Pennsylvania Commission sees no reason to believe that the state authorities cannot achieve such regulation through such procedure. Pennsylvania Public Utility Commission has always been willing and now stands ready to cooperate with the Maryland Commission in the development of appropriate determinations and believes that the cooperative procedure contemplated by the Federal Power Act is not only the legal but the most appropriate and practical [1219] manner in which to attain solution of the problems involved in regulation of the rates of Pennsylvania Water and Power Company;

2. Section 19 of the Federal Power Act clearly provides that the service and rates of a licensee shall be subject to control by the duly constituted agency of the state in which the service is rendered or the rate charged and not by the Federal Power Commission except where no such duly constituted state agency exists.

3. Pennsylvania Public Utility Commission is the duly constituted agency of the Commonwealth of Pennsylvania for the regulation and control of the service

and rates of Pennsylvania Water and Power Company, among others, and, on December 5, 1944, instituted a proceeding to determine the fairness, reasonableness and justness of the rates and charges of that company at our complaint docket No. 14028. This proceeding is active. A questionnaire calculated to elicit pertinent information has been transmitted to Pennsylvania Water & Power Company and the answers filed from time to time are being analyzed by the Pennsylvania Commission staff.

4. Pennsylvania Water and Power Company sales and deliveries to Pennsylvania customers of energy generated by steam or falling water in Pennsylvania do not constitute transactions over which Federal Power Commission has rate [1220] jurisdiction because no element of interstate or foreign commerce is present in such transactions. This position is taken on the basis of the phraseology of Part II of the Federal Power Act which throughout clearly contemplates State Commission jurisdiction over the transactions mentioned.

5. Sales and deliveries of energy by Pennsylvania Water & Power Company to the Pennsylvania Railroad Company in Pennsylvania are not subject to Federal Power Commission rate jurisdiction as such transactions (1) have no element of interstate or foreign commerce and (2) are retail transactions clearly exempted from Federal Power Commission jurisdiction by the phraseology of Part II of the Federal Power Act. Jurisdiction over such sales and deliveries clearly resides in Pennsylvania Public Utility Commission.

6. Federal Power Commission has no jurisdiction to fix or determine the apportionment of joint rates or rates for service rendered jointly with others by Pennsylvania Water & Power Company or for energy sold by Pennsylvania Water & Power Company jointly with others, since the Federal Power Act does not confer

this jurisdiction. Pennsylvania Public Utility Commission, however, is specifically given jurisdiction over the apportionment of joint rates of public utilities by Section 306 of the Public Utility Law, approved May 28, 1937, Pennsylvania Pamphlet Laws 1053, as amended. This situation demonstrates that Pennsylvania Commission regulation of the [1221] rates and charges of Pennsylvania Water & Power Company for energy delivered to Pennsylvania customers in Pennsylvania is complete and the point is particularly pertinent in this record since all of the rates charged by Pennsylvania Water & Power Company to Pennsylvania customers are rates which must be apportioned by reason of the joint obligations of Pennsylvania Water & Power Company and others under all of the contracts with Pennsylvania customers.

It would clarify our manner of thinking on jurisdiction greatly if Mr. Goldberg would state for the record Pennsylvania contracts over which the Commission Staff asserts that the Federal Power Commission has jurisdiction?

• • •

MR. GOLDBERG: Mr. Examiner, before I proceed to answer Mr. Miller's request for a statement from me as to what contracts the staff considers the subject of the Commission's jurisdiction, which I thought was clear at this point, but if it is not, I will be glad to restate it, I would like to have Mr. Miller respond to a few questions that I have in connection with his statement so that I may understand his position more clearly.

Does Mr. Miller contend that the Pennsylvania [1222] Commission's jurisdiction attaches both to the generation of hydro electric energy by Pennsylvania Water & Power Company and to the generation of elec-

tric energy by steam by Pennsylvania Water & Power Company, under section 20 of Part I of the Act?

MR. MILLER: I do not understand what you mean by "generation", Mr. Goldberg. We contend that the Pennsylvania Commission's jurisdiction attaches to the rates of the Pennsylvania Water & Power Company for energy generated either by hydro or steam. Does that answer your question?

MR. GOLDBERG: I think so. In other words, you contend that the Pennsylvania Commission may regulate the rates regardless of the fact that part of the electric energy used to service the customers may have been generated by steam?

MR. MILLER: That is correct.

MR. GOLDBERG: Now then, under what section of the Pennsylvania Public Utility Law or any other provisions of Pennsylvania law does counsel for the Pennsylvania Commission contend that the Pennsylvania Commission has authority to sit jointly with a State Commission or confer jointly with them to fix rates?

MR. MILLER: Excuse me while I look it up here (examining). Under Section 913 of the Pennsylvania Public Utility Law.

MR. GOLDBERG: Do you have it there?

[1223] MR. MILLER: Yes.

MR. GOLDBERG: May I see it?

MR. MILLER: Certainly (handing).

TRIAL EXAMINER: Is there some short specific provision in the section that counsel has referred to that can be read into the record?

MR. MILLER: Yes, sir. I will read it, Mr. Examiner.

"Section 913: Joint hearings and investigations. Reciprocity." (A) "The Commission shall have full power and authority to make joint investigations, hold joint hearings within or without the Commonwealth, and issue joint or concurrent orders in conjunction or concurrence with any official, board, commission, or agency of any state or of the United States, whether in the holding of such investigations or hearings, or in the making of such orders, the Commission shall function under agreements or compacts between states or under the concurrent power of states to regulate the interstate commerce, or as an agency of the Federal Government, or otherwise."

The second paragraph of the section deals with motor vehicles and so forth.

MR. GOLDBERG: Does counsel for the Pennsylvania Commission contend that Section 19 of the Federal Power Act relates to interstate commerce?

MR. SPARKS: I did not understand that. Did Mr. Goldberg [1224] say interstate commerce or intrastate?

MR. GOLDBERG: Interstate.

TRIAL EXAMINER: Read the question.

(Question read.)

MR. GOLDBERG: You made some references to Section 19 in your statement. I do not have it before me, but I want to be clear as to your understanding of Section 19. Does it apply, in your opinion, to interstate commerce, or only to intrastate commerce?

MR. MILLER: My point on Section 19, Mr. Goldberg, was simply that it provides as to service and rates that a licensee shall be subject to and controlled by the duly constituted agency of the state in which the service is rendered or the rates charged.

MR. GOLDBERG: Insofar as the service is intrastate commerce, is that right?

MR. MILLER: We claim jurisdiction only over rates for energy delivered in Pennsylvania to Pennsylvania customers.

We feel that that is not interstate commerce in the sense that it can be regulated by the Federal Power Commission.

MR. GOLDBERG: What I am trying to find out is your view of section 19. Is it your view that section 19 relates to regulation of intrastate commerce only?

MR. MILLER: No, I have no such view.

MR. GOLDBERG: Is it your view that section 19 relates [1225] to interstate commerce?

MR. MILLER: No, not alone.

MR. GOLDBERG: Does it at all relate to interstate commerce, to rates involving the transmission of electric energy in interstate commerce?

MR. MILLER: I think, Mr. Goldberg, you are asking me for a legal opinion beyond the scope of my statement as to what the application of section 19 should be.

MR. GOLDBERG: I am trying to find out how you conceive section 19 is to be applied, and that is what I thought your statement involved. Do you contend that if the sales to the Pennsylvania customers are in interstate commerce that such sales may be regulated by the Pennsylvania Commission alone or jointly, as you say, under section 19?

MR. MILLER: Yes.

MR. GOLDBERG: You mentioned a proceeding by the Pennsylvania Commission—I think you stated the order was December 5, 1944?

MR. MILLER: That is correct.

MR. GOLDBERG: Does that investigation relate to the sales of electric energy by Pennsylvania Water & Power Company to the Consolidated Gas Electric Light & Power Company of Baltimore?

MR. MILLER: It is general in its terms and relates to everything which the Pennsylvania Commission may find to [1226] be within its jurisdiction. The jurisdictional lines have not been drawn in that proceeding as yet.

MR. GOLDBERG: Is it the position of the Pennsylvania Commission that the sales of electric energy to the Consolidated Gas Electric Light and Power Company of Baltimore by Pennsylvania Water & Power Company are subject to the Pennsylvania's Commission jurisdiction?

MR. MILLER: That, I think, would remain to be seen. That is not my present position, however. I am limiting my statement or position at this time solely to sales in Pennsylvania to Pennsylvania customers.

MR. GOLDBERG: Then, as I understand it, you are not saying that the present investigation of the Pennsylvania Commission relates to rates involved in the sales of electric energy to the Consolidated of Baltimore by Pennsylvania Water & Power Company, is that right?

MR. MILLER: No, I am not saying that, Mr. Goldberg. I am saying that the jurisdictional lines have not been drawn in that proceeding, but my position in that regard is that the Federal Power Commission does not have jurisdiction but that the Pennsylvania Commission does, over sales to Pennsylvania customers in Pennsylvania.

MR. GOLDBERG: That is the extent of your position, is that right?

MR. MILLER: Yes.

[1227] MR. GOLDBERG: What phraseology of Part II of the Act do you refer to in your statement?

MR. MILLER: I refer to all of the phraseology in Part II of the Act. I would have to read all of Part II, Mr. Goldberg, to answer that question.

MR. GOLDBERG: Is there any part of it that you can point out right now as supporting the position you have taken on this record?

MR. MILLER: We do not rely on any specific part; we rely on the phraseology of the part as a whole.

MR. GOLDBERG: Is there any part out of that you would care to point out to us right now?

MR. MILLER: No.

MR. GOLDBERG: Just one more question. You talked of the jurisdiction of the Federal Power Commission with respect to joint rates. May I have your definition of "joint rates"?

MR. MILLER: I have no definition ready, Mr. Goldberg. I would say that the rates charged by the Pennsylvania Water & Power Company, the Respondent, for services rendered jointly with other parties, would be joint rates.

MR. GOLDBERG: Well, of course, a definition that uses a word to be defined is not very helpful. I appreciate, perhaps, that you may not have been prepared to define the contention you are making. Are you using it in the sense that it was used in the Interstate Commerce Act?

[1228] MR. MILLER: I am using it in the factual sense in which Pennsylvania Water & Power Company renders service in conjunction with other contracting parties.

MR. GOLDBERG: Are you using it at all in the sense that it is used in the Interstate Commerce Act?

MR. MILLER: Yes, I take it it is used in whatever legal sense the factual situation indicates.

MR. GOLDBERG: Now, then, Mr. Examiner, I have been requested by counsel for the Pennsylvania Commission to state the position of the Staff as to the Commission's jurisdiction over the contracts of the Pennsylvania Water & Power Company. I thought it was clear, but I am willing to state it again.

It is the position of the Staff that all of the contracts of the Pennsylvania Water & Power Company for the transmission and sale of electric energy at wholesale in interstate commerce are subject to the Commission's jurisdiction, but the Staff is not contending that the Commission should assert jurisdiction over the contract between Pennsylvania Water & Power Company and the railroad for railroad service. That is the only exception the Staff is making.

In so stating, Mr. Examiner, of course, that does not preclude the Commission from asserting jurisdiction if it wishes to.

MR. SPARKS: At this time, if Your Honor please, I have a statement to make.

[1229] TRIAL EXAMINER: Just one minute. Does counsel for the Public Service Commission of Maryland have a statement to make?

MR. FRANCE: Not except to say that we will have one witness. We will be ready when called, and it should not take over 20 minutes to half an hour on the direct.

TRIAL EXAMINER: Does counsel have anything to say with respect to the remarks just entered in the record by the counsel for the Pennsylvania Public Utility Commission?

MR. FRANCE: If Your Honor please, it is my understanding that the Public Service Commission of Maryland requested the Federal Power Commission to assume jurisdiction in this case. I was not counsel for the Public Service Commission of Maryland at the time the case originally started and I cannot speak at firsthand, but certainly our position is clear in the record.

I think there is a letter in the record from the Public Service Commission of Maryland to the Federal Power Commission requesting them to assume jurisdiction.

TRIAL EXAMINER: Is it proper to construe the situation to sum up to this, that as of the time of the need of the Public Service Commission of Maryland, there has not been any agreement between the States of Maryland and Pennsylvania such as provided for in Section 20 of the Federal Power Act?

MR. FRANCE: No, sir. There were some preliminary [1230] negotiations between the two commissions as I understand it, and subsequently, the Maryland Commission then wrote to the Federal Power Commission requesting it to assume jurisdiction.

TRIAL EXAMINER: Very well.

MR. FRANCE: I think that is an accurate statement.

* * *

[1231] RALPH L. THOMAS,
a witness called on behalf of the Consolidated Gas Electric
Light and Power Company of Baltimore, being first duly
sworn, testified as follows:

DIRECT EXAMINATION.

By MR. STURTEVANT:

Q. Will you please state your name and your present position? A. Ralph L. Thomas. I am vice president of the Consolidated Gas Electric Light and Power Company of Baltimore; also a director and a member of the Executive Committee of that company. As vice president, I am in charge of the Electric Operation and Engineering including inter-system transactions and operations.

[1234] Q. In connection with what phase of the present proceeding are you testifying? A. I am concerned solely with the question of the allocation of any reduction in the operating revenue or rates of Holtwood Company that may be ordered by the Federal Power Commission.

Q. Yes.— A. (Continuing) I want to make that clear, in view of my former association with the Holtwood Company.

[1235] Q. Mr. Thomas, what type of hydro developments are the Holtwood and ~~Sus~~ Harbor projects? A. Run-of-river type.

Q. What is meant by a "run-of-river" type development? A. It is a hydro development in which the [1236] quantity of water which can be stored behind the dam is negligible in relation to the annual power output. The purpose of the dam is to create a head and the storage of water is incidental. River flow cannot be stored in any appreciable quantity and to a large extent water must be used as it runs down the river.

[1237] Q. Mr. Thomas, would it be economic to develop either plant on the basis of continuous power output? A. No, it would not.

Q. To what extent is variation from a true run-of-river output possible at Holtwood and Safe Harbor? A. Mr. Spaulding, in his testimony at page 128, spoke of the utilization of pondage. During low flows the daily cycle consists of lowered output in the early morning hours when the load is light and of increased output in the peak-load hours of late morning and early afternoon. Weekly cycles during which the pond elevation is slightly decreased to get increased power on the heavy load week-days, and then allowed to reach maximum again over the week-end, are also used.

Under exceptional circumstances the drawdown could be extended over a longer period than one week.

Q. Would it be economical to develop either Safe Harbor Plant or the Holtwood Plant on the basis of utilizing the pondage without supplementary steam electric supply? A. No, this would not be economic.

Q. Will you explain how it is possible to justify economically the development of these sites? A. The load of an ordinary electric system is not constant, but varies during the hours of each day and of the week, the peak loads coming in the morning or early hours. Hydro developments of the Holtwood and Safe Harbor type can [1238] be justified if the hydro capacity and energy during periods of low flow can be used to skim off the upper portion of the load curve and supply peak systems.

In this manner the hydro capacity can replace an amount of steam electric capacity many times as great as the continuous firm power available from the same quantity of water.

Q. How has Holtwood company obtained the backup steam-electric supply with which to firm up its hydro ca-

capacity? [1239] A. * * * Holtwood Company has relied almost entirely on the Baltimore steam plants to firm up its hydro capacity. Initially, there were provisions for minor use of small standby steam-electric plants of the Pennsylvania customers, but generally speaking they soon fell into disuse.

[1241] Q. Is the supply of power and energy to Baltimore Company similar or comparable to the supply of the four Pennsylvania customers of Holtwood Company? A. It is not.

Q. Please explain the difference. A. Holtwood Company and Baltimore Company pioneered in developing the correct principles of operating a combined hydro steam generating supply system. Over a period of many years the operations of the plants of the two companies were coordinated to obtain maximum overall economy, usefulness, and reliability. The operating arrangements reached their culmination in the 1931 [1242] Holtwood and Safe Harbor contracts. There has been much testimony regarding those contracts in this and previous cases. Suffice it to say here that under those contracts the Baltimore, Holtwood and Safe Harbor companies were closely knitted together into a unified regional power system by which energy can be generated, purchased and supplied in the most economical manner.

[1243] Baltimore Company is entitled to receive all of the power and energy available to Holtwood Company after the requirements of the Pennsylvania firm power customers had been met, Baltimore Company may therefore be called the residual receiver.

Baltimore Company is also obligated to coordinate its facilities and power supply with those of Holtwood Company, and to supply back-feed steam electric energy to Pennsylvania as required to supplement the hydro supply

and to make it possible for Holtwood Company to sell conventional firm power in Pennsylvania.

[1253] Q. Now, Mr. Thomas, reverting to the 1931 Baltimore-Holtwood power contract, will you explain the nature of Baltimore Company's payments to the Holtwood Company, and the effect thereof? A. Under the 1931 agreement, Baltimore Company contracts in effect to pay to Holtwood Company annually an amount which, together with whatever revenue Holtwood Company receives from its other customers will yield to Holtwood Company a net revenue determined by the contractual formula which is independent of kilowatts and kilowatt hours.

It is evident that under this arrangement any reduction in rates paid for power and energy by any of the Pennsylvania customers is automatically charged to and immediately made up by Baltimore Company without any compensating increase in the supply of power and energy to Baltimore Company.

Likewise, any increase in operating expenses and taxes that Holtwood Company has is immediately and automatically paid by Baltimore Company.

This contractual arrangement again distinguishes Baltimore Company from the Pennsylvania customers. And I want to emphasize that point particularly because there are some friends of mine here today representing the Pennsylvania customers, and I am not sure they understand the workings of [1254] the Baltimore-Holtwood Contract and understand that when they get a reduction, Baltimore immediately and automatically makes it up.

[1264] Q. In connection with the comments you have made on Mr. Davis' cost-of-service study, do you desire to say anything about contract renewals entered into by Holtwood Company with the Metropolitan Edison Company for the supply to York? A. Yes. I previously referred to that as the peak service type of contract. Under that contract

Holtwood Company [1265] originally contracted to supply 20,000 kilowatts of peak service to Metropolitan Edison and, due to an increase in load, that has now been increased to 21,000 kilowatts. The use of that figure would, of course, change the results in Mr. Davis' study.

Q. Now, as I understand— A. Excuse me. I might indicate, however, that that peak service contract also provides for rates which are very much lower than the corresponding rates in the other contract. I am not prepared to say what the net effects of the substitution of 1946 conditions would be.

I might also comment that I think that is a very desirable type of contract for Holtwood Company to have.

[1282] CROSS-EXAMINATION.

[1285] By MR. GOLDBERG:

[1290] Q. Does Consolidated purchase electric energy from [1291] Holtwood?

MR. SPARKS: I object to that, if Your Honor please.

TRIAL EXAMINER: On what ground?

MR. SPARKS: I object to it on the ground that this witness is not qualified to state whether or not the transactions contemplated by those contracts constitute a sale of energy, or whether they constitute a sale of some other kinds of services.

TRIAL EXAMINER: Objection overruled.

THE WITNESS: Yes, sir; we purchase energy among other services.

By MR. GOLDBERG:

Q. And that energy is purchased under Items H and I in this proceeding? A. Yes.

Q. I show you Items H and I (indicating). A. Yes.

Q. And does Consolidated purchase electric energy from Safe Harbor? [1292] A. Yes.

Q. And does that purchase take place under Items E, F and G in this proceeding?

MR. SPARKS: Same objection, if Your Honor please.

TRIAL EXAMINER: Overruled.

MR. SPARKS: Exception.

THE WITNESS: Yes.

By MR. GOLDBERG:

Q. And when you testified just now that Consolidated purchases electric energy, you were using the term in the sense of kilowatt hours, is that right? A. Yes.

Q. That is right? A. Yes, as far as I know, every report we filed with the Commission showed the number of kilowatt hours we purchase from those companies.

[1319-A]

DIRECT EXAMINATION.

[1321] MR. SPARKS: Mr. Examiner, in response to the request of [1322] counsel for the Commission contained at pages 894 to 896 inclusive of the transcript record in this proceeding, as to clarification of our statement of the issues, as we saw them, at page 34 of the transcript, we now make the following statement:

Counsel's inquiries were directed to and confined to the first issue with respect to the jurisdiction as stated by us at transcript page 34. His first inquiry was directed to the meaning of that part of our statement that "This Commission has no jurisdiction over the rates, charges and classifications of Pennsylvania Water & Power Company under Part II of the Act, for the reason that the Company is to be treated as a licensee * * * and is, therefore subject to Part I of the Act only."

We mean by that statement that by virtue of the proceedings had by this Commission in its Docket No. IT-5524 and its orders issued therein dated November 3, 1939 and November 23, 1943, in connection with Holtwood Project No. 1881, Pennsylvania Water & Power Company must be treated in this proceeding as a licensee under Part I of the Federal Power Act.

Counsel's second inquiry is far from clear but in an effort to answer it we assume it to be stated as follows:

Is it the contention of Respondents that Pennsylvania Water & Power Company is presently subject to Part I of the [1323] Act, including Section 20, assuming that the States directly concerned are unable to agree through their properly constituted authorities on the services to be rendered or on the rates or charges of payment therefor?

In answer to this question we repeat that the record does not show that the two states directly concerned, namely, Maryland and Pennsylvania, are unable to agree through their properly constituted authorities on the services to be rendered or on the rates or charges of payment therefor; in the absence of such evidence and an appropriate finding by the Commission based thereon, this Commission has no jurisdiction over any of the rates, charges or classifications of Pennsylvania Water & Power Company under Part I of the Act. If it is assumed that there will be substantial evidence in the record to support such a finding by the Commission our contention is that any rate regulatory jurisdiction the Commission may have in that event over Pennsylvania Water & Power Company is limited by Section 20 to the authority to regulate and control only so much of the services rendered, and of the rates and charges of payment therefor as constitute interstate commerce.

Counsel's third inquiry was directed to the meaning of that part of our statement at transcript page 34 that "This Commission has no jurisdiction over the rates, charges and classifications of Pennsylvania Water & Power Company under Part II of the Act, for the reason that the Company * * * [1324] may be considered to be a purchaser of power from a licensee for use in public service, and is, therefore, subject to Part I of the Act only."

Counsel inquired if that statement had reference to purchase of electricity by Pennsylvania Water & Power Company from Safe Harbor who is a licensee under Part I. In reply we state that we had reference to the fact that, as the evidence shows, Pennsylvania Water & Power Company does make payments to Safe Harbor, who is a licensee under Part I of the Act as stated by Commission Counsel.

Our contention is, however, that such payments are not the result of a purchase and sale of power by Pennsylvania Water & Power Company from Safe Harbor but are, on the contrary, payments of a division to Safe Harbor of revenues received by Pennsylvania Water & Power Company from Consolidated Gas Electric Light & Power Company of Baltimore for joint services rendered by Safe Harbor and Pennsylvania Water & Power Company to the Baltimore Company and to others. However, if contrary to the evidence in this proceeding it should be contended by Commission counsel that such payments are not divisions but arise out of a purchase and sale of power by Pennsylvania Water & Power Company from Safe Harbor then we contend that by reason of such contention of Commission Counsel, Pennsylvania Water & Power Company must in that event be treated as a purchaser of power from a licensee for use in public service; and that under Section 20 the respective jurisdictions of [1325]

the States and the Commission over the rates and charges of such purchasers of power from licensees, together with the statutory conditions and limitations thereon, are the same as over licensees under the Act.

MR. GOLDBERG: Just one or two questions of counsel who just read the statement.

With respect to the second portion—paragraph 2, if I may call it that—I understood counsel to say that if the Commission has any jurisdiction at all, it is limited only to that portion of the service which is in interstate commerce. To use an example, does that statement mean this,—Assume that 50 per cent of the energy used to serve the Pennsylvania customers comes from Maryland and is clearly in interstate commerce, and the balance, the other 50 per cent, originated in Pennsylvania and was used to serve the customers in Pennsylvania; does counsel mean that in the illustration I have just used if the Commission has jurisdiction at all, the Commission may only fix 50 per cent of the rate?

MR. SPARKS: I think the answer to that is that our contention would be that the Commission could not fix any of the rate.

MR. GOLDBERG: I am glad I asked that question because it puts a different light on the statement.

The other question that I ask for clarification purposes is, I noted in response to my third inquiry, Mr. Sparks [1326] said, "purchase of electricity".

Did he mean purchase of electric energy?

MR. SPARKS: My recollection is that Mr. Goldberg used the same word.

MR. GOLDBERG: No, my question is at page 896 and I said, "Because it purchases electric energy." That is at lines 13 and 14 on that page.

MR. SPARKS: If Your Honor please, our use of the term there was in the light of the provision in Section 20 which refers to power, and if the word is to be changed, then we would use the word "Power" in our answer.

MR. GOLDBERG: May I ask how counsel for the Respondents interprets Section 20?

MR. SPARKS: It covers all character of services, if Your Honor please, such as they may be provided for under their various contracts.

MR. GOLDBERG: In other words, you think that the phraseology of Part I is broader than it is in Part II?

MR. SPARKS: I am not sure what you mean by that, Mr. Goldberg.

MR. GOLDBERG: You made specific reference to power in Section 20 and stated it would include all services in the contract of Holtwood, and I was wondering if you were making a distinction between the use of that word and the use of the phraseology in the jurisdictional provisions of Part II.

[1327] MR. SPARKS: We do take the position that the word "Power" is a broader word than the word "energy" in Part II.

MR. GOLDBERG: Electric energy?

MR. SPARKS: Electric energy.

MR. GOLDBERG: Just one or two other questions.

One of my purposes in asking these questions is, as the Examiner knows, the large number of questions that have been directed to me, and although I feel they have been answered, I plan to study them during the recess. I want to study them in the light of the answers that have just been given.

Counsel stated with respect to the illustration I used—50 per cent interstate electric energy, and 50

per cent intrastate electric energy—that it would be their contention that the Commission has no jurisdiction at all. Is it the contention of the Respondent that if any part of the electric energy used to serve, let us say, the Pennsylvania customers, is in intrastate commerce, then the Federal Power Commission has no jurisdiction?

MR. SPARKS: Yes.

[1331] TRIAL EXAMINER: The Examiner assigns the following item designations to material introduced in evidence by Respondent's counsel by reference to the official files of the Commission:

Item "O" will designate the petition for specification of issues and reconsideration of direction fixing order of procedure filed April 3, 1946, now referred to at transcript 49 and 1329.

Item "P" to the letter addressed to Pennsylvania Water and Power Company by the Acting Secretary of the Federal Power Commission dated November 16, 1945, stating the order of procedure, now referred to in the transcript at 49 and 1329.

[1333] MR. GOLDBERG:

• • • You will recall, Mr. Examiner, that at transcript pages 885 to 890, inclusive, counsel for the Respondents in this proceeding requested that staff counsel be required to state for the record the contentions of the staff with respect to certain matters included in fifteen inquiries which counsel for Respondents read into the record.

If the Examiner has no objection I will go forward with the position of the staff at this time!

TRIAL EXAMINER: Does counsel wish to state it orally, or has he the matter referred to prepared in

form for submission to the reporter for incorporation into the record?

* MR. GOLDBERG: I am afraid I must state it orally by reason of its preparation. I think probably it would enable everyone here who has not heard the questions before, to understand the answers.

TRIAL EXAMINER: Very well.

MR. GOLDBERG: Counsel for Respondents stated that answers to the inquiries by staff counsel were necessary "to expedite this proceeding in an orderly manner and to afford them"—that is the Respondents—"a fair and adequate opportunity to know and meet any of the contentions of the Staff."

Counsel for Respondents also stated that the "complexity of the questions which may arise, as stated in the (fifteen) inquiries, illustrates and shows the handicap to which [1334] Respondents have been subjected by the orders in this proceeding."

Respondents state further, Mr. Examiner, through their counsel, that failure to indicate the contentions of the Staff in regard to the fifteen inquiries will deprive them of the fair hearing required by the Federal Power Act and the fifth amendment of the Constitution.

Before turning to the fifteen questions, I should like to state that notwithstanding Respondents' statements to the contrary they have been heretofore advised of Staff counsel's position on all of the matters contained in the fifteen inquiries. That presentation of their case has in no wise been handicapped. This clearly appears from the record, and further Respondents' presentation discloses a complete awareness of Staff counsel's contentions.

Staff counsel, however, Mr. Examiner, has no objection to stating again his position with respect to

the matters referred to in the fifteen questions, and I shall answer them in the order in which they appear in the transcript.

Question No. 1 is as follows:

"Is the authority of the Commission to regulate and control rates or charges in this proceeding to be exercised under Part I of the Federal Power Act? If so, under which sections?"

Although the question, Mr. Examiner, is phrased in terms of Commission action, I assume that the Respondents intended [1335] to secure Staff counsel's position.

Staff counsel contends that jurisdiction in this case exists under Parts I and II of the Act, and more particularly under Sections 20, 205, 206 and related sections.

[1336] Question number two is as follows: "Is it contended that either of the states of Pennsylvania or Maryland has not authorized, empowered or provided a commission or other agency for the regulation and control of the rates and charges of payment for services to be rendered by Respondents or by their customers engaged in public service within the meaning of Section 19?"

Staff counsel, Mr. Examiner, does not understand the reference to or the relevance of Section 19 in this case. If Respondents will explain to staff counsel the relevance or the reference to Section 19, I will undertake to respond in the light of that explanation, should response be necessary.

Question number three is as follows: "Is it contended that either of the states of Pennsylvania or Maryland has not provided a commission or other authority to enforce the requirements of Section 20 within their respective states?"

Staff counsel contends that assuming there has been no repeal by implication of the provisions of Section 20 relating to state activity in regard to interstate rates by licensees, that the state commissions of Maryland and Pennsylvania have no legal power to agree on the rates and services rendered by Penn Water in interstate commerce to Consolidated of Baltimore, Pennsylvania Power and Light Company, Metropolitan Edison Company, and Philadelphia Electric Company.

Question number four is as follows: "Is it contended [1337] that the states of Pennsylvania and Maryland are unable to agree, through their properly constituted authorities, on the services to be rendered by Respondents or on the rates or charges of payment therefore within the meaning of Section 20?"

In view of my answer to question three the answer to question number four is, of course, "Yes."

Question number five is as follows: "Is it contended under Section 20 of the Act that the Commission has jurisdiction in this proceeding to regulate and control the services rendered by Respondents to Consolidated Gas Electric Light and Power Company of Baltimore and to regulate and control the component parts of rates and charges of payment for such services as do not constitute interstate or foreign commerce, particularly the special facilities services comprising the furnishing of the Highlandtown and the Gunpowder Falls transmission line in the state of Maryland?"

Staff counsel contends that the agreement of June 1, 1931, and supplements thereto, between Consolidated of Baltimore and Penn Water, which agreement is known in this proceeding as items "H" and "I", is a contract by Penn Water for the sale of electric energy to Consolidated of Baltimore at wholesale in interstate commerce, and that under such contract Penn Water

does sell electric energy at wholesale in interstate commerce to Consolidated. Further, staff counsel contends that there is no question of intrastate commerce involved in [1338] Items "H" and "I".

Staff counsel contends, also, that the Commission has jurisdiction under Section 20 to regulate and control the rates and charges for the interstate transmission and sale of electric energy for resale which is made by Penn Water under Items "H" and "I".

Question No. 6 is as follows: "Is it contended, under Section 20, that the Commission has jurisdiction in this proceeding to regulate and control any of the services rendered by Pennsylvania Water and Power Company, by itself or jointly with Safe Harbor Power Corporation, to Metropolitan Edison Company, Pennsylvania Power & Light Company, Philadelphia Electric Company, or Pennsylvania Railroad Company, all in the state of Pennsylvania, and to regulate and control the rates and charges of payment for any of such services? If so, which services, rates and charges to which companies?"

Staff counsel contends that Penn Water sells electric energy at wholesale in interstate commerce to Metropolitan Edison Company, Pennsylvania Power and Light Company, and Philadelphia Electric Company, and that the sales of electric energy made under those contracts are not made jointly by Penn Water and Safe Harbor.

Staff counsel further contends that Safe Harbor sells all of its electric energy under the contract identified in this proceeding as Items "E", "F", and "G" to Penn Water and [1339] Consolidated of Baltimore.

Staff counsel contends that the rates and charges under Items "H" and "I" in this proceeding and in the sales of electric energy to Pennsylvania Power and Light Company, Metropolitan Edison Company,

and Philadelphia Electric Company, are all subject to the Commission's jurisdiction under Section 20. Staff counsel is not asserting any claims with respect to Exhibit 10, which is the Pennsylvania Railroad contract, but that is not to say that the Commission is without jurisdiction over that contract.

Question number seven: "Is it contended that the Commission has jurisdiction in this proceeding under the Act to regulate and control or to determine and fix by order any division of rates or charges which may be received by Pennsylvania Water and Power Company for services rendered jointly with others? If so, which divisions?"

Question number 7 has no relevance to the proceeding for, as staff counsel views it, Penn Water has no joint rates.

Question number eight is as follows: "Is it contended that the Commission has jurisdiction in this proceeding under the Act to regulate and control, or to determine and fix by order, any rates or charges for services rendered jointly with others, without making such other participants in such joint services parties respondent to this proceeding?"

This question is likewise irrelevant, because as staff [1340] counsel views it, Penn Water has no joint rates.

Question number nine: "Is it contended, under Part II of the Act, that the Commission has any jurisdiction to determine and fix by order any of the rates, charges or classifications of Pennsylvania Water and Power Company for services rendered to its customers? If so, is the authority of the Commission in this proceeding to be exercised under Part II of the Act/particularly Sections 206 (a) or 206 (b) thereof?"

Staff counsel contends, among other things, that the Commission has jurisdiction under Part II to de-

termine and fix by order the rates, charges or classifications of Penn Water for the transmission and sale of electric energy at wholesale in interstate commerce to Consolidated of Baltimore, Pennsylvania Power and Light Company, Philadelphia Electric Company, and Metropolitan Edison Company.

Staff counsel contends that such authority exists, particularly under Sections 205, 206 and related sections.

Question number ten: "Is it contended under Part II that the rates or charges of Pennsylvania Water and Power Company and Safe Harbor Water Power Corporation for services to Consolidated Gas Electric Light and Power Company of Baltimore, are for the transmission or the sale of electric energy within the meaning of Sections 201 (b) and 206 (a), and that thereby the Commission has jurisdiction in this proceeding under such sections to determine the justness and reasonableness of [1341] such rates and charges and to fix the same by order?"

Staff counsel contends that Penn Water sells electric energy at wholesale in interstate commerce for resale to Consolidated of Baltimore under Items "H" and "I", so designated in this proceeding, that the sales of electric energy in interstate commerce for resale made by Safe Harbor are made only under Items "E", "F" and "G", and that Safe Harbor and Penn Water are not engaged jointly in selling electric energy at wholesale in interstate commerce for resale to Consolidated of Baltimore, and that the Commission has jurisdiction under Part II to regulate the rates or charges for the transmission or sale of electric energy to Consolidated of Baltimore by Penn Water.

Question number eleven: "Is it contended under Part II that the Commission has any jurisdiction in this proceeding to determine and fix by order the com-

ponent parts of the rates and charges of Respondents for the special facilities services rendered to Consolidated Gas Electric Light and Power Company, comprising the furnishing of the Highlandtown substation facilities and the Gunpowder Falls transmission line in the state of Maryland?"

Staff counsel contends that the Commission has complete jurisdiction under Part II of the Act to regulate the interstate transmission or sale of electric energy for resale in interstate commerce to Consolidated of Baltimore by Penn Water.

[1342] Question number 12: "Is it contended under Part II that the Commission has any jurisdiction in this proceeding to determine and fix by order the component parts of the rates and charges of Pennsylvania Water and Power Company and Safe Harbor Water Power Corporation to Consolidated Gas Electric Light and Power Company for the services rendered by them jointly with others to the Pennsylvania Railroad Company in the state of Maryland?"

Question number 12 is irrelevant for, as staff counsel views it, Penn Water and Safe Harbor are not engaged in rendering joint service and staff counsel is asserting no claims with respect to the Pennsylvania Railroad contract.

Question number 13: "Is it contended under Part II that the rates or charges of Pennsylvania Water and Power Company by itself or jointly with Safe Harbor Water Power Corporation for any of the capacity, energy or special services to Metropolitan Edison Company, Pennsylvania Power and Light Company, Philadelphia Electric Company, or Pennsylvania Railroad Company, all in the state of Pennsylvania, are subject to the jurisdiction of the Commission in this proceeding? If so, which of the rates or charges for such services to which of such customer companies?"

Staff counsel contends that Penn Water is engaged in the sale of electric energy for resale in interstate commerce to Metropolitan Edison Company, Pennsylvania Power and Light [1343] Company, and Philadelphia Electric Company, and that Penn Water and Safe Harbor do not render any services jointly to these companies.

Staff counsel also contends that the sales of electric energy described are subject to the Commission's jurisdiction under Part II of the Act.

Staff counsel is not asserting any claims with respect to Exhibit 10, which is the Pennsylvania Railroad contract, but that is not to be construed as meaning that the Commission is without jurisdiction over this contract.

Question number 14: "Is it contended under Part II that the rates and charges of Pennsylvania Water and Power Company, jointly with Safe Harbor Water Power Corporation, Consolidated Gas Electric Light and Power Company of Baltimore, and Potomac Electric Power Company, for services to Pennsylvania Railroad Company, are sales of electric energy at wholesale within the meaning of Sections 201 (b) and 201 (d), and are thereby subject to the jurisdiction of the Commission in this proceeding?"

This question is irrelevant for staff counsel is asserting no claims with respect to the Pennsylvania Railroad contract.

Question number 15: "Which of the rates, charges or classifications for services, which it may be contended are subject to the jurisdiction of the Commission in this proceeding under Part II, or which of the rules, regulations, practices or contracts affecting such rates, charges, or classifications, is [1344] it contended are unjust, unreasonable, unduly discriminatory or preferential?"

Staff counsel contends that the rates involved in the sale of electric energy at wholesale in interstate commerce by Penn Water to Consolidated of Baltimore, Metropolitan Edison Company, Pennsylvania Power and Light Company and Philadelphia Electric Company are unjust and unreasonable. Staff counsel further contends that the Commission's authority relates not only to the rates involved but to all of the provisions of the contract and all terms and conditions thereof which the Commission in the exercise of the authority may order revised in accordance with the facts in this case.

MR. SPARKS: Of course, Mr. Examiner, I have not had an opportunity to analyze the answers which Mr. Goldberg has given. Obviously he has not answered all of the questions directly or specifically, so I should like some time to study the answers after we have had an opportunity to read them in the record, and take such position and make such representations here as we deem advisable at that time.

[1348]

JOHN A. WALLS.
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CROSS-EXAMINATION.

By MR. GOLDBERG:

[1362] Q. Isn't it a fact, Mr. Walls, that construction work on the McCall Ferry project ceased in November, 1907? A. I do not believe that is the case, but I am not competent to testify on that. There are others in the company who have investigated the matter who may be called upon to give you that information.

Q. I am interested in your statement that you do not believe it is the case. Why do you say that? A. I believe that some construction work was done in 1908.

[1363] Q. Such as? A. Work on Cully's Cut.

Q. Tailrace excavation? A. Yes. Some concrete placement, building of a ramp, design of the plant details, etc.

Q. And those matters which you have just enumerated are matters which came to your attention when you first went to the project in 1909, or since 1909? A. Both.

Q. Did you in connection with the company's original cost determination review the matter of cessation of construction work on the McCall Ferry project? A. Not in detail at all.

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[1364] Q. Did you express an opinion at the time you talked to him that there had been no cessation of construction work in November, 1907? A. I don't think I did because that would be subject to definition as to what is cessation of construction, whether it is temporary or for a limited period such as for the season or because of a flood. I do not believe I discussed those things in detail to a degree that I remember.

[1365] Q. What did you think Mr. Gunn was discussing with you when he was talking about cessation of construction work in November of 1907? A. I think that was a general term for the interruption which took place in the normal, or we might say steady, progress of construction work due, in the case of 1907, to the failure of the Knickerbocker Trust Company.

Q. You say "Interruption which took place." What do you mean by interruption? A stopping of the work for a limited period of time and then resumption at a later date? A. No, not necessarily.

Q. What do you mean? A. Interference with the steady progress of the work. I do not believe that at that time all of the people were discharged from the work. Some work may have gone on at very slow pace. That I don't remember.

Q. You say not all of the people were discharged. Do you know how many people they had before November 1907, working on the project? A. I don't remember.

Q. Do you know how many people they retained? A. A few.

Q. How many? A. I don't remember.

Q. Very few? [1366] A. I judge a few.

Q. You wouldn't call the few that remained, a construction crew, would you? A. It depends on what they were doing.

Q. What were they doing? A. I don't know. I don't recall.

* * *

[1368] Q. At least describing the work generally as you have, your impression of what was carried on, isn't it fair to describe the work during the period which I refer to as the period of cessation, and you as the period of interruption to construction, as consisting of necessary maintenance, clean up, tailrace excavation, and the placing of a small amount of concrete required to protect the existing plant.

* * *

[1369] THE WITNESS: That was important work, and it is my impression that it consisted generally of that, but the Tailrace work was an especially important construction job.

By MR. GOLDBERG:

Q. It was the type of work which could be carried on independently of the cessation. Isn't that so? A. I don't understand what is meant, "Independently of the cessation."

Q. It was a special job which could be carried on, even though no other construction work was going on at the project. [1370] Isn't that so? A. It could be, but it was not carried on for that reason. I judge it was carried on

because it was such an essential portion of the work to get completed so as to be out of the way when the powerhouse construction would start.

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Q. The work was continued, as you understand it, to secure the benefit of progress which had already been made in completing the tailrace excavation. Is that right? A. No, sir. This was work that it was desirable to do if possible with the least interference with the powerhouse construction. It was because of this situation that the tailrace was below, in other words, south of the powerhouse, and the excavated rock from the tailrace had to be carried across the construction area to the north of the powerhouse and there deposited in a ramp. Had the powerhouse construction work [1371] and the tailrace construction work gone on together there would have been a certain amount of confusion in bringing the cars of rock from the south to the north and in bringing the machinery in from the east to the west and in bringing concrete materials in from east to west crossing over this very limited construction area. So it seems to me it was a great advantage to get that tailrace work out of the way before the powerhouse construction started, and I should think as an engineer that it would make the cost of the construction cheaper in the end to have done it that way.

Q. Doesn't your explanation bear out what I said some moments ago, that it was a speelial type of job? A. Any type of job in connection with a power plant might be said to be special.

Q. It was the type of job which you had said it was beneficial to carry on when other construction work, particularly of the powerhouse, was not going on. Isn't that so? A. That is true.

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[1491] Q. * * * Mr. Walls, just how did the failure of Knickerbocker Trust Company make it impossible for McCall Ferry Power Company to secure necessary funds to continue construction? A. I can't answer that. That can be answered by somebody who has gone through the record and studied it.

Q. But you have testified it was the failure of the Knickerbocker Trust Company that made it impossible for McCall Ferry Power Company to secure the necessary funds for continuing construction of its plant. As a result they had to curtail their work. A. That is right. That is a matter of general knowledge at the time, but I don't have in mind the details.

Q. I want to know what your general knowledge is based on. I want to know how much substance your opinion has. A. I know there was the Knickerbocker Trust failure. I am aware from the records that the work was curtailed as a consequence of lack of money, attributed to the Knickerbocker Trust failure. I can't go into any further detail without examining the records, but you can get all of that information from witnesses who will be available.

Q. I am trying to find out what you know about it. How much money was on deposit with the Knickerbocker Trust [1492] Company when it failed? A. I don't know.

Q. If it hadn't failed was there sufficient money in the bank to complete the project? A. I don't know.

Q. Do you know whether in the initial financing sufficient funds were secured to complete the project as planned? A. Of the McCall Ferry Company?

Q. Yes. A. I do not know.

Q. If it were the fact that when the project was initially financed by McCall Ferry Power Company they had not secured sufficient funds to complete the project, would you say that the failure to complete the project was due to the bankruptcy of the Knickerbocker Trust Company?

A. Yes.

Q. Why? A. Because I have had too much experience in constructing power plants where money was not available at the beginning in sufficient amounts, and where it was necessary to scrape it together from time to time, often under considerable hardship, but nevertheless work was carried on. I refer now to the Shawinigan Power plant.

Q. But assuming further that there wasn't enough money [1493] in the Knickerbocker Trust Company to complete the project, and enough funds could not have been secured from Knickerbocker Trust Company on loan, using the initial financing as collateral, would you still say that the failure of the Knickerbocker Trust Company caused the cessation of the work in November of 1907? A. Yes, in this sense: That the Company might have secured funds from some other source.

Q. Why didn't it go to another source? A. It wasn't practicable at that time. There was a panic.

Q. When was the initial financing done? A. I don't know.

Q. You know it was in 1905, don't you? A. No, I don't remember.

Q. Let's assume it was in 1905. When did the Knickerbocker Trust Company fail? A. I think in November of 1907. I am not sure of the month.

Q. So if my assumption as to the completion of the initial financing is correct there was a period of two years during which time the McCall Ferry Power Company knew they did not have enough funds to complete the project. Isn't that so? A. That I judge is so.

[1494] Q. And during those two years they had the opportunity of securing the additional funds, didn't they? A. I assume so.

Q. There was no panic in those two years? A. Not that I know of.

Q. There had been no failure of the Knickerbocker Trust Company? A. True.

Q. So, despite the fact the opportunity was available to them, they made no effort to secure those funds. Isn't that so? A. That is true, but I assume there was no necessity in the absence of fore-knowledge of the panic. It would perhaps be better to get the money later on if it was going to be available and pay less interest on it.

[1515] Q. What work other than that performed by Empire was carried on by the receiver, Mr. Aldred, during the receivership? [1516] A. Designing work, contracting for equipment, organization of the personnel to be expanded later into the force required for later design, construction and operation.

I judge that there were property matters that came up for consideration, but I was not familiar with them.

Q. Did you mention the letting of construction contracts?

I think you mentioned contracts for equipment. I was wondering whether you had intended to include, in contracts for equipment, contract with Empire Engineering? A. I had omitted to mention that. It is true that that is one of the things the receiver did.

Q. Who was carrying on the design work? A. It was being carried on under my direction.

Q. Under your direction? A. Yes.

Q. So that began not earlier than November 1, 1909? A. The additions or changes to the previous plans were started then under my direction. But there were pretty complete detailed plans for much of the work in existence at that time.

[1517] Q. What contracts for equipment were made during the receivership? A. I cannot be too sure about that, but I think in connection with the generators and turbines, possibly other electrical equipment, but I do not recall definitely the dates when those contracts were entered into.

Negotiations started during the receivership, but whether they were terminated then or later on in 1910, I do not recall.

[1518] Q. Who undertook the organization of personnel during the receivership? A. The Empire Engineering Corporation had its own organized personnel, and when I came in November 1, I started to organize the company's personnel.

Q. What were these property matters that you refer to? A. I wasn't familiar with the property matters at that time, but I think that there was some disagreement over property matters with a man named Heine, at Pequea. I think also matters were taken up with the Pennsylvania Railroad, but I am not sure of that as to date.

Q. Relocation of tracks? A. Not the relocation itself but some property matters growing out of the relocation of the tracks.

Q. Who was carrying on the property matters? A. Mr. Clarke.

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[1687] Q. Glancing down the balance of page 2 and page 3 of that report [Exhibit 79], do you find any statements in there to which you find you cannot subscribe now? A. With the exception of the interpretation which I have placed upon the first sentence of the fourth paragraph I see nothing to which I would object greatly other than the statement that there has recently been installed a system of flash boards at the top of the dam whereby we obtain an increased head of four feet with resultant increase in the storage capacity above the dam. I take no exception to that.

"This device should give the plant an increased efficiency of about 25 per cent at the low stage of the river."

[1688] I think that statement is one which really requires amplification because the device actually produced greater

pondage and greater head. I do not know how you would apply a percentage figure to those two things.

[1752] Q. You have told us that Safe Harbor makes its service available under the three-party contract, Items "E", "F" and "G", Exhibit No. 71 up to the end of December 31, 1945, that is for Exhibit 71 to Edison Light and Power, Exhibit 73, Philadelphia [1753] Electric, and Exhibit 76 to Penn Power and Light Company. Right? A. Yes, sir.

Q. What do you mean when you say, "Safe Harbor makes its services available" under those contracts, taking up each one separately, if you will? A. In general I mean by making its services available that Safe Harbor, by contract, is supposed to stand ready to supply the entitlements of the customers as the customers may draw on those entitlements.

The entitlements differ under the four contracts. They are very different as to details and each contract, of course, would have to be considered by itself in all its details in connection with any explanation.

Q. Perhaps I can simplify it by asking the direct question: Does Safe Harbor under the contracts known as "E", "F" and "G" in this proceeding sell electric energy to Consolidated and to Penn Water?

MR. SPARKS: I object, if Your Honor please, on the ground that the contracts speak for themselves.

TRIAL EXAMINER: Objection overruled.

THE WITNESS: "Sell electric energy" is perhaps a very loose and inaccurate way of specifying. There is billing on the basis of energy but energy is only one of the attributes of the service which the customer is entitled to draw, others being, [1754] for example, power, power factor and voltage and frequency and perhaps other characteristics.

By MR. GOLDBERG:

Q. Aren't power factor and voltage conditions of service? A. I would say that they are all conditions of service. Voltage and energy is a condition of service, also.

[1755] Q. In other words, you sell electric energy of certain characteristics. That is when you say "Power factor and voltage". Isn't that so? A. No, sir. I don't think it is quite that. I think we sell service. It is up to the customer to draw under his entitlement as much of that as he wishes at such times.

Now, then, it is the duty of the supplier to provide that the draft of energy be in accordance with the terms of the contract, for instance, within a certain voltage range and that there should be a certain amount of power available, if that is what you mean.

Q. You are telling us that in connection with the sale of electric energy when you say that a company sells electric energy the term covers many conditions of service involved in that sale. Right? A. I would say that selling electric energy is a loose way of speaking. It sells electric service and billing is based partly on energy. I think that is the better way to speak of it.

Q. Can the customers utilize the service without the electric energy? A. No, sir, no more than it can utilize the service without the power or without the frequency or the voltage or the phases and so forth.

Q. So the electric energy they receive is a [1756] consideration to the payment they make. Right? A. Is one of the attributes of the service. I don't know how to interpret it otherwise.

Q. Is it inaccurate for me to say that Safe Harbor sells electric energy under items E, F, and G, to Consolidated and Penn Water? A. If you mean by that what I mean, that actually what is sold is service, if that is a short way of saying that and perhaps an imperfect way then it is all right.

Q. And part of that service is the electric energy—right? A. Part of that service is having available electric energy and power under various stipulated conditions.

Q. Right, such as power factor, voltage— A. But not energy alone or power alone or phase alone.

Q. The power factor is determined by the customer's load, isn't it? A. In part, but also determined by the relative excitation^s of the fields of the supplier and customer.

Q. You are saying that a part of the service rendered under items E, F, and G is the electric energy delivered to Consolidated and Holtwood under the conditions prescribed in that contract—right?

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[1757] THE WITNESS: I wouldn't say it is a separable part. I might say it is one component mixed in with others, all of which are required to be available by the supplier to the customer.

By MR. GOLDBERG:

Q. All right. You name all of the components of service to Penn Water and Consolidated by Safe Harbor under items E, F, and G. A. Energy.

Q. Electric energy? A. Electric energy, electric power.

Q. What's that second one? A. Electric power, frequency, voltage, power factor cooperation, proper number of phases, and a supply naturally is subject to variation from time to time as to the quantity of energy, and there are certain tolerances with respect to voltage, frequency and power factor.

Q. Will you say there are certain—when you say there are certain tolerances you mean there is a certain leeway from the power factor designated in the contract, voltage and frequency designated in the contract—is that right? A. Yes, sir, from the normal.

Q. Will you describe now all of the components of service under Exhibit 71 by Safe Harbor? [1758] A. They would be the same as to the characteristics and service but would differ as respects the amounts as perhaps in some other respects, too.

Q. You mean may differ in the amount of kilowatt hours and the demands? A. And perhaps the voltage and some other things.

Q. But Exhibit 71 would involve, would it not, electric energy, electric power, frequency, voltage, power factor, proper number of phases, and the supply subject to variation from time to time with respect to the quantity of energy and would involve certain tolerances with respect to the voltage, frequency and power factor—right? A. Yes, sir.

Q. In other words, all of the components of service that are in items E, F, and G, are also in Exhibit 71, with the qualification that in Exhibit 71 there may be variations in the detail in degree—right? A. I think that is right.

Q. Is that true of Exhibit 72? A. I think so.

Q. Exhibit 73? A. I think so.

Q. Exhibit 76? A. Yes, sir.

Q. Do you know of any contracts that do not involve [1759] these components of service which you have described? A. I don't recall any now.

Q. In other words, it may be said that in all contracts the disposition, the output of generating units to customers involve these components of service you have described—right? A. Yes, sir; ***

[1763]. Q. What you have told us about the rendering of this electric service amounts to this, does it not: Someone decides to buy his water in bottles, spring water, for instance. He just does not buy water. He wants such water to have a certain bacterial content and so forth; isn't that so? A. Yes.

Q. And that is what you have in mind when you break up the kilowatt hours in these components, the same way that I just broke up the water into its components, bacterial content, and so forth? A. It is a little different from that because the customer couldn't be satisfied merely with energy which he might draw, let us say, over 24 hours a day at low power, because his load might be peaked, which would require him to have that energy available during certain hours at a very high rate, in other words, a high power.

Q. In other words, it is like this man I am talking about that buys water. He is not satisfied with just any water. He wants water of certain characteristics at the times he needs it and wants it. Right? A. Yes. I think the example would be a little more apt if you would refer to flowing water where the customer can [1764] open his spigot at his wish and draw the amount of water which he wishes at the pressure which he wishes and have the characteristics which he wishes.

[1765] Q. The commodity that you generate, transmit, sell to your customer, that is the electric energy or kilowatt hour component—right?

THE WITNESS: No, sir. I should say the commodity is the electric service which consists of energy and these other attributes.

By MR. GOLDBERG:

Q. But the commodity that you generate is the electric energy or kilowatt hours—right? A. We generate energy at a certain rate and under certain conditions, but that does not make energy the commodity in my opinion.

Q. To get that ultimate commodity there are other factors that are involved such as rate of delivery that you

mentioned and voltage and frequency—right? } A. No: I should say when you look at electric supply as a whole, energy is just one characteristic of it, and energy is not the only thing that is sold. Ordinarily the billing is on the basis of energy, plus, of course, charges for other services which might be rendered.

[1766] Q. Is it your statement that Safe Harbor does not sell electric energy under Items "E", "F" and "G" to Consolidated and Penn Water? A. I believe that is the case, that it does not sell energy itself to Consolidated. Consolidated draws energy.

Q. You say it does not sell electric energy to Consolidated itself? A. It does not sell electric energy itself to Consolidated.

Q. By that you mean that the electric energy that is sold to Consolidated and Holtwood is the result of the other characteristics or conditions of service that you mentioned, [1767] such as frequency, voltage, power factor, proper number of phases, electric power, and so forth—right? A. Not quite that. It is more this way: that the supplier holds itself ready to supply the draft of energy which may be drawn at the customer's volition, and the billing in the case of Consolidated is not related to energy as it is with the other customers, including the railroad, Lancaster, Coatesville, Metropolitan.

[1769] Q. Now to get back to my question: Does Safe Harbor sell electric energy to Consolidated and to Holtwood under [1770] Items "E", "F" and "G"?

THE WITNESS: I don't think that it does. It sells service.

By MR. GOLDBERG:

Q. It does not sell electric energy? A. As such, no. It sells service.

Q. What does that "as such" mean? A. Energy is one attribute of the service, but one among many. I don't want to exclude the thought that energy comes into the supply that is taken by Consolidated, but it is not the billing basis and it is not what Safe Harbor, to my mind, sells.

[1771] Q. The energy that you conceive of as being transmitted over those lines at Baltimore are measured in terms of kilowatt hours at the customer's premises—right? A. Yes, sir.

Q. Nevertheless, you say Safe Harbor does not sell electric energy under their contract, right? A. That is my interpretation of it, yes, sir.

TRIAL EXAMINER: May I test one of your answers you gave previously by reversing the language a bit? Would you say as an attribute of service that Safe Harbor sells energy?

[1772] THE WITNESS: No, sir, I don't think Safe Harbor sells energy to Consolidated. It makes energy available to Consolidated and Consolidated draws that energy but does not pay for that energy on the basis of the amount of energy it receives.

TRIAL EXAMINER: Not even as an attribute of service?

THE WITNESS: Not even as an attribute of service to Consolidated Company, although I would prefer my explanation to an assertion that energy was not an attribute of service. That is a little difficult for me to decide at the moment.

By MR. GOLDBERG:

Q. Are you saying in that answer to the Trial Examiner, Mr. Walls, that Safe Harbor does not sell electric energy to Consolidated because the contract does not provide a rate per kilowatt hour like some contracts do? A. Yes, in the sense that Consolidated pays the same amount, you might say, whether the energy is great or little so that the billing is not dependent upon the amount of energy, as, for example, in cases where in the old times electric lighting was sold on a flat rate. You paid so much and used the lamps in your house as much as you pleased.

Q. You say, then, that there is no sale of electric energy because the payments under the contract are not arranged in terms of a rate per kilowatt hour—right? A. Yes, sir, I would say then that sale is not attached to energy.

[1773] Q. But that is not the fact, is it, with respect to the contracts which are numbered 71, 73 and 76. Is that right? A. I would say in all cases we ought to use the words "sell service" and not "sell energy." But actually energy is billed along with demand charge for power in contracts 71, 73 and 76.

Q. Would you say that electric energy is not sold under Exhibits 71, 73 and 76? A. Strictly speaking energy is not sold. It is service that is sold.

Q. Is it your statement that strictly speaking electric energy is never sold, that it is service that is sold? A. I would think that would be a more accurate way of speaking, but it is not the usual way and very often I do not speak of it in that accurate way.

Q. In the usual sense you would say electric energy is sold under Exhibits 71, 73 and 76—right? A. Yes, sir.

Q. But you would not say that in the usual sense with respect to Items "E", "F" and "G"—right? A. Yes, sir.

Q. And you would not say it in the usual sense with respect to Items "H" and "I", which is the contract be-

tween Holtwood and Consolidated—is that right? A. Yes, sir.

[1774] Q. You consider the contracts "E", "F" and "G" and "H" and "I" of the same character and on the same footing—right? A. In general, yes, sir.

• • •

Q. I mean what is the difference between what is delivered at Lancaster, York, Coatesville, Holtwood and Baltimore? A. They are all the same in that they are electric supply.

Q. All kilowatt hours? A. All kilowatt hours with the other attributes.

• • •

[1775] Q. * * * Let me start over again. Let me first mention the contracts under which Penn Water sells. Those contracts in 1939 are Items "H" and "I", Exhibit 71, Exhibit 73, and Exhibit 76—right? A. Pennsylvania Railroad should be included.

• • •

[1776] Q. I mentioned "H" and "I", the two-party agreement. A. Yes.

Q. Exhibit 71, which is the York supply, Exhibit 73, Coatesville supply, Exhibit 76, Lancaster supply, and you have added Pennsylvania Railroad contract. Right? A. Yes, sir.

Q. Then the only contract they had in 1939 to purchase were items "E", "F" and "G"—right? A. I think that is right.

Q. I am not talking about the interchange agreements. A. Yes.

Q. And the situation was the same in 1940, wasn't it? A. Yes, sir.

Q. And the same in 1941? A. Yes, sir.

Q. And the same in 1942? A. Yes, sir.

Q. And 1943? A. Yes, sir.

Q. The same in 1944? A. Yes, sir.

Q. The same in 1945—right? [1777] A. Yes, sir.

Q. But in 1946 Exhibit 71 was superseded and replaced by Exhibit 72, which is the agreement between Penn Water and Metropolitan Edison—is that right? A. Yes, sir.

Q. In 1932 what contracts did Safe Harbor have? I can help you on one of them, "E", "F" and "G"—
A. I don't remember.

Q. Which is the three-party contract. That certainly was in existence in 1932, right? A. Yes, sir. I would have to look up the others. I don't recall at the moment.

Q. If you find that they had any other contracts in 1932 I wish you would let me know. A. Very well.

Q. In 1933, and for every year up to and including today, Safe Harbor had the contract identified as Items "E", "F" and "G"—right? A. Yes, sir.

Q. Do you say that Safe Harbor had any other contracts between 1933 and today for the sale of electric energy? A. Other contracts than what?

Q. "E", "F" and "G".

A. It had contracts, omitting for the moment consideration for the sale of electric energy.

[1778] Q. All right. A. It had other contracts.

Q. Had what? A. It had other contracts, but I don't recall the dates of them.

Q. Are you referring to the Lancaster power supply contract which is dated May 1, 1933? A. Yes, sir.

Q. Are you referring to the Coatesville power supply contract dated August 1, 1933? A. I think so, yes, sir.

Q. You would say, then, that Safe Harbor had contracts with those companies named in Exhibit 73 and 76 in 1933 and for every year thereafter including today—right?
A. Yes, sir.

Q. And you would say that beginning with 1935 Safe Harbor had an agreement known as the York power supply contract beginning with that date down to and including December 31, 1945. Is that right? A. Yes, sir.

Q. Would you say that Safe Harbor has an agreement with Metropolitan Edison Company known as the Metropolitan Edison power supply contract of November 15, 1945?

* * *

[1779] THE WITNESS: No, sir.

* * *

Q. Now, is it your statement that Safe Harbor sells, first, to use your term, electric service under Exhibits 71, 73 and 76? A. Yes, sir.

Q. Now, will you say, accepting my phrase, that it sells electric energy under those contracts? A. Excepting?

Q. No, not excepting but accepting my phrase that it sells electric energy under those contracts. A. No, I would say that it sells only electric service.

Q. Electric service? A. Yes.

Q. And you say that Safe Harbor sells electric service under Items "E", "F" and "G"—right? A. Yes, sir.

Q. Isn't it a fact that Safe Harbor sells all of its electric service, to use your terms, under Items "E", "F" and "G"? [1780] A. I don't know how that would be interpreted. As I look at it, being a party to these three contracts, Safe Harbor may be said to be in position to sell and may be selling service. It is a legal matter and I can't decide it.

* * *

Q. * * * is it your statement that Safe Harbor does not render all of its electric service under Items "E", "F"

and "G"? A. I think that it does render all of its service under Items "E", "F" and "G", but it renders that service to a pool, which service is extended to other customers.

Q. And that is the case with respect to Exhibit 72, is it not?

THE WITNESS: Except for the legal implications I think that is true.

[1781] By MR. GOLDBERG:

Q. Your engineering and layman's concept—right? You were not giving me a legal answer when you said "That is true"—right? A. No, sir, an engineering answer.

Q. Now, then, in view of the fact that the electric service is fed into a pool, the condition of service was the same under the superseded contract, Exhibit 71, as it is under Exhibit 72—right? A. Legally, or engineering viewpoint?

Q. Engineering viewpoint. [1782] A. I see no difference.

[1783] MR. GOLDBERG: I think I can dissipate any confusion which may exist.

TRIAL EXAMINER: Very well.

MR. GOLDBERG: If I were to say this: Exhibit 71 is the York Power Supply contract under which service was rendered to Edison Light and Power Company.

Penn Water and Safe Harbor were named parties in that agreement.

That contract was superseded by Exhibit 72, beginning January 1, 1946, and in the new contract only Penn Water is a named party, Safe Harbor is not.

Now, then, Mr. Walls has stated that with respect to the superseded agreement, Exhibit 71, service was rendered by Safe Harbor by reason of the fact that it fed its service into a pool which pool was drawn upon, perhaps, to meet the [1784] requirements of Edison Light and Power and Metropolitan Edison, and he has further agreed that under the new agreement, Exhibit 72, Safe Harbor still feeds its service into a pool and that pool is drawn upon to serve Metropolitan Edison.

By MR. GOLDBERG:

Q. Have I correctly stated it, Mr. Walls? A. I think so.

[1786] Q. Why was Safe Harbor included in Exhibit 71, and left out of Exhibit 72, even though in both cases its service is rendered by feeding into a pool? A. I don't know.

Q. You signed the contract which is known as Exhibit 71 in behalf of Penn Water and Safe Harbor as president of both companies, didn't you? A. Yes, sir.

Q. When you signed it in behalf of Safe Harbor as its president were you of the opinion that Safe Harbor was going to render service directly to the purchasing companies in Exhibit 71? A. I can't remember fully, but it seems to me that it [1787] was desirable to have Safe Harbor a party to the contract partly for tax reasons and perhaps partly for assurance to the customer that the customer would be protected by Safe Harbor's intervention, and perhaps for other reasons. I don't remember them now.

Q. How could the customer be assured of service by having Safe Harbor included in the agreement then if Safe Harbor had been left out of the agreement? A. The customer would have been dependent upon Penn Water only had Safe Harbor been left out, and I suppose the customer might have felt that he had an extra assurance by having Safe Harbor as a party.

Q. How could he have extra assurance by having Safe Harbor's name in the contract if Safe Harbor sells all of its service under items E, F, and G? A. I can't explain it.

Q. In other words, if it sells all of its service under items E, F, and G, it has nothing left to sell to the customer under Exhibit 71, isn't that so? A. There may be a legal element involved there that I am not competent to speak of.

* * *

[1788] THE WITNESS: If Safe Harbor is a party to the contract with York Edison with the consent of the other parties, Penn Water and Consolidated, I should think that Metropolitan would have more assurance of supply than if it relied upon a contract with Penn Water alone.

By MR. GOLDBERG:

Q. Isn't it a fact that the provisions of the items E, F, and G require the sale of all of Safe Harbor's service to Consolidated and Penn Water? Right?

* * *

THE WITNESS: Safe Harbor contract, as I recall it, gives a contractual entitlement to Penn Water and Consolidated on a ratio of one-third and two-thirds, but that contractual entitlement I think must be construed in the light of the contract between Consolidated and Penn Water, so there is an involvement there that prevents me from answering that question.

* * *

[1791] Q. I mean did Safe Harbor under the provisions of Exhibit 71 sell any electric service to the customer companies in that contract? A. All I can say is that it didn't bill it. What was meant by selling it I don't know from your sentence.

Q. If they had sold it wouldn't they have billed it? You mean they give it away? A. Well, I think if selling and billing are to be considered together then Safe Harbor didn't sell.

Q. As a matter of fact, every penny of revenues that Safe Harbor has ever received it received under the electric service rendered in connection with items E, F, and G. Isn't that so? A. So far as I remember at the moment.

* * *

[1792] Q. Mr. Walls, entirely from the viewpoint of your familiarity with the operations of the company as its chief executive officer and as its chief engineer for many years, can you tell us which of the contracts of Pennsylvania Water and Power Company involve the transmission or sale of electric energy in interstate commerce? A. The Penn Water Consolidated contract.

Q. Items H and I? A. Yes, sir.

* * *

[1793] Q. And speaking again from your knowledge of the company, that is of Safe Harbor Water Power Corporation this time, having been associated with that company as its chief executive officer and in other responsible positions since its incorporation, which of the contracts of Safe Harbor involve the transmission or sale of electric energy in interstate commerce in your opinion?

MR. SPARKS: I will object to the question, if your Honor please, on the ground that although Mr. Goldberg may be willing to state that he is asking the question in order to elicit an answer not legal in its implications that the answer necessarily does involve legal implications.

The reason I say that is this: If it were not for the language in the Act referring to transmission and sale of energy in interstate commerce, I am quite sure

Mr. Goldberg would not ask the question. That means that there must be some effort here to have the witness testify with regard to the meaning of those terms in the Federal Power Act.

[1794] TRIAL EXAMINER: The previous question involved Penn Water?

MR. GOLDBERG: Yes, the same question except this involves Safe Harbor.

TRIAL EXAMINER: Let the Examiner state this: That as far as legal concepts are concerned he understands what Respondent's counsel's objection amounts to and why he makes it.

If this question had been asked at the very outset of the cross-examination the Examiner would be willing to invoke a more stringent or stricter rule in the consideration of whether he would sustain that objection or not. But this witness has been cross-examined this morning at some length on this very subject, and there has been a great deal of difficulty on the part of the cross-examining attorney and the witness to get their ideology or ideas in line.

Now, then, in view of the difficulties encountered this morning in connection with this witness' engineering opinion as to whether energy was involved under these contracts, the Examiner will permit the present question to be [1795] put as a necessary culmination, or as a last resort, to counsel in getting answers concerning the transmission of energy, or the sale of energy.

[1796] TRIAL EXAMINER: Involved in this question is some conception of what interstate commerce is.

MR. SPARKS: That is right.

TRIAL EXAMINER: To that extent counsel's objection is well taken.

But in view of the whole discussion which has been had with regard to the operations of these two companies the Examiner believes the witness is capable of answering the question without injustice to himself or Respondent.

The objection is overruled.

MR. SPARKS: May it be understood, if your Honor please, that the witness is not giving a legal answer to the question?

TRIAL EXAMINER: That is correct.

• • •
[1797] **THE WITNESS:** From an engineering viewpoint I should say the three party contract—

By **MR. GOLDBERG:**

Q. Items E, F, and G. A. Items E, F, [redacted] G. I can't trace any particular kilowatt in interstate commerce.

Q. We know, for instance, that the kilowatt hours that go over the 220 K. V. lines from Safe Harbor to Baltimore which originate at Safe Harbor originate in Pennsylvania and are transmitted into Maryland. Right? A. Yes, sir.

Q. When I said "interstate commerce", that is what you understood me to mean, origin in one state and transmission into another state—right? A. Yes, sir.

• • •
[1799] Q. As an engineer, and as a man familiar with the operations of Pennsylvania Water and Power Company, is it your statement that the York Power Supply contract, the Coatesville Power Supply contract and the Lancaster Power Supply contract do not involve the transmission

of electric energy which originated outside of the State of Pennsylvania? A. No, I should say that electric service is sometimes backfed from Maryland to these customers, and that perhaps sometimes interchanged power from some of them may cross the line into Maryland?

Q. Yes, and that the amounts of electric energy which are transmitted up to the supply centers of Coatesville, York, and Lancaster under those agreements we have discussed this morning are in substantial amounts which originated in Maryland, isn't that so? A. Amounts of electric supply are substantial at times.

Q. And as a matter of fact the York power, the Lancaster power and Coatesville power supply contracts actually have a rate per kilowatt hour, haven't they? A. Yes, sir.

Q. And substantial amounts of the energy at times which are sold at the rates shown in those contracts come from Maryland—right? A. Yes, sir; I think that is so. [1800] Q. Let me show you those excerpts from the complaint for injunction and declaratory judgment which were marked this morning as Exhibit 85.

It is the fact, is it not, that you stated to the Court in that complaint that, "For many years plaintiff has sold electric energy so developed at wholesale in interstate commerce."

Isn't that so? A. Yes, sir.

Q. And when you made that representation to the Court you believed it to be in accordance with the facts. Isn't that so? A. Yes, except that I was not particular for this purpose about the significance of the word "sold electric energy."

Q. You thought it was an accurate way to say it to the Court under oath, didn't you? A. Sufficiently accurate for these purposes; yes, sir.

Q. Did you in any way qualify that statement when you made it? A. No.

Q. What agreements that Pennsylvania Water and Power Company had at that time, in 1940, did you consider

represented agreements under which sales of electric energy in interstate commerce were made? [1801] A. I suppose under the Penn Water and Consolidated contract.

Q. Items H and I? A. Items H and I.

Q. And also the York, Lancaster and Coatesville power supply contracts. Isn't that so? A. Yes, they should be included, too.

Q. And the electric energy to which you were referring that was sold in interstate commerce was the electric energy which Holtwood purchases from Safe Harbor under items E, F, and G, and itself generates. Isn't that so? A. A portion of that.

Q. Yes, as well as the energy which comes up at times from Maryland which you refer to as backfeed. Right? A. Yes, sir.

Q. When you said that "For many years", plaintiff has been selling electric energy in interstate commerce, what period of time does that "For many years" have reference? A. I suppose since October 1910.

Q. Showing you Exhibit 86, the excerpts from the amended complaint, it's a fact, is it not, that the same statement was made in the amended complaint? A. Yes, sir.

Q. What you have told us about the statement as made in the complaint when first given applies to the statements as made in the amended [1802] complaint? A. Yes.

Q. May I show you Exhibit 87, excerpts from the petition of review which we discussed this morning?

It is a fact, is it not, that the same statement as was made in the original complaint and the amended complaint were made in the petition for review—right? A. Yes.

Q. And what you have told us about the statements in the petition, in the amended complaint and the original complaint, apply to the statement as made in the petition for review—right? A. Yes, sir.

Q. And those statements, if made today, would be accurate statements, isn't that so? A. Yes, sir, if made with the same thought in mind.

[1812] Q. I am saying that the basis for the statements appearing in Exhibits 88 and 89 is the statements appearing in Exhibit 85 and Exhibit 86 and our discussion relating to those statements—right? A. I assume that is so.

By MR. GOLDBERG:

Q. Mr. Walls, do you agree with this statement: "All of the capacity and energy available from Respondent's power development is sold under a contract dated June 1, 1931, and supplements thereto dated August 1, 1932, and November 22, 1932, between the Safe Harbor Water Power Corporation, Consolidated Gas Electric Light and Power Company of Baltimore, and Pennsylvania Water and Power Company"? By "Respondent's" in [1813] that quotation I meant Safe Harbor Water Power Corporation.

THE WITNESS: I think that is the case, except as may be modified by any of the other agreements in which Safe Harbor has entered with other customers.

By MR. GOLDBERG:

Q. You mean the York power supply, the Coatesville power supply, and Lancaster power supply contracts which have been marked in this case? A. Yes, sir, and including the Pennsylvania Railroad contract, perhaps, too.

Q. What modifications do you have in mind? A. That some of the service of Safe Harbor may be considered as furnished or furnishable to Coatesville, Lancaster, Pennsylvania Railroad, and so forth.

[1814] Q. Has Safe Harbor rendered any service in the past under the Coatesville, Lancaster and York contracts that you know of? A. In the sense of furnishing supply to the pool of Penn Water and Safe Harbor that might be considered to be the case. I am speaking now not contractually but from the viewpoint of the energy which comes from Safe Harbor and the other services.

Q. But that energy which is supplied to the pool by Safe Harbor is supplied in accordance with the provisions of items "E", "F" and "G". Isn't that so? A. As perhaps modified by Safe Harbor's commitments under the contracts 73, 76, and so forth.

Q. All you mean by that is that Penn Water's necessities [1815] of meeting the requirements under the Coatesville, York and Lancaster contracts have a bearing on the manner in which, and the amounts of energy, it takes under items "E", "F" and "G"—right? A. I was looking at this from the viewpoint of the energy that is contributed, you might say, to the pool by Penn Water and Safe Harbor, being available to Coatesville, Lancaster, and so forth, without giving consideration to the contractual elements. I am speaking only now of the flow of service. Do I get your point?

Q. You are talking in terms of the pool operating to supply the lowest cost energy at all times wherever needed. Is that it? A. That is it, yes.

Q. In other words, for the purpose of securing the maximum overall economy? A. Yes..

Q. In that sense you say that electric energy generated by Safe Harbor may be the cheapest energy at any particular time, and in accordance with the arrangements between the companies that energy will be used by Penn Water to meet the requirements at York, Lancaster and Coatesville—right? A. Well, that brings in a question of contractual relations. No, I was thinking of this solely from the viewpoint of the electric service itself, not considering it as received by Penn Water and dealt out by Penn Water.

[1816] Q. Well, if I understand what you mean by considering that Safe Harbor at times renders service to Pennsylvania Power and Light, Philadelphia Electric, Edison Light and Power up to the end of 1945 and Metropolitan Edison, when Safe Harbor is down and the energy is steam-

generated energy coming up from Maryland, it may be said under those circumstances that Consolidated is rendering service to the Pennsylvania customers, too, isn't that so?

A. Yes, sir.

[1817] Q. Do you know why Consolidated is not a party to the Coatesville, York, and Lancaster contracts?

[1818] TRIAL EXAMINER: The witness may answer the question limiting his answer to what he knows about that from an operating standpoint.

THE WITNESS: Actually service from Consolidated gets to Coatesville and the other customers as a general operating procedure. I suppose that that service would be covered by the "H" and "I" contracts.

[1819] Q. You just said that from an operating procedure the electric energy which is fed into the pool by Consolidated gets up there and is covered by the provisions of Items "H" and "I"—right? A. That I assume it would be covered.

Q. Yes. When Safe Harbor feeds the energy into the pool isn't it fair to assume that that is covered by the provisions of Items "E", "F" and "G"? A. That may be so, but not necessarily exclusively so. It is possible that the other contracts to which Safe Harbor is a party may have to be considered. That is a contract matter which I do not feel I am competent to pass upon at the moment.

Q. Do you know whether Safe Harbor ever has rendered any electric service under the Coatesville, Pennsylvania and York contracts? A. If the sense of rendering service is that some service from Safe Harbor mixed in with Penn Water's service or not has been received by Coatesville, then I should say that there has been service rendered.

Q. Otherwise not—is that right? That is the only [1820] sense in which you can conceive of Safe Harbor rendering service? A. I think so.

Q. To York, Coatesville and Lancaster—right? A. I think so.

Q. And what you are saying would apply to Potomac Electric Power Company when it feeds energy into the integrated pool—right? A. Will you make the question a little more definite?

Q. Potomac Electric Power Company is tied in to the regional transmission system of which Consolidated, Safe Harbor and Holtwood are members. Right? A. Yes.

Q. There are times when Potomac feeds electric energy into the pool which goes up toward Baltimore—right? A. Yes.

Q. When it does that, and if that energy moves on up to the Pennsylvania customers, it can be said that they render service, too—right? A. Yes, sir.

[1822] Q. Would you say that the contracts I have just described, which are items "E", "F" and "G" in this proceeding, provide for two distinct services, that is: (a) sale of electric power and energy available from the Safe Harbor development to its two customer utility companies, Consolidated and Holtwood—and (b) construction, operation and maintenance by Holtwood Company of certain transmission lines from Safe Harbor to Baltimore and Washington and certain other transmission facilities.

THE WITNESS: Using the word "service" there in place of "energy" I think that would be correct.

By MR. GOLDBERG:

Q. You mean instead of "sale of electric power and energy" you want to say "sale of electric power and service"? A. "Sale of electric service" involving readiness to [1823] supply the power and energy, among other things.

Q. The two statements I have asked you to agree with I read from pages 11 and 12 of the main brief filed by George T. Hambright, Arthur H. Hull, George Ross Hull, and Hull, Leiby and Metzger, counsel for Safe Harbor in the Commission's investigation of rates and charges of that company in Docket No. IT-5914. I want you to look at those two statements as they appear in the brief beginning on page 11 and ending on page 12 as I point them out to you and ask you if you can categorically agree with the statements as made in the brief. A. That being a statement of counsel of company, I would agree with it as a statement made on a contractual matter by counsel in which I would have confidence.

Q. In other words, you agree with those two statements because you have confidence in the counsel that made the statements. Is that right? A. Yes, sir.

Q. But is it your statement that you do not agree with it in the light of your knowledge of the operations of Safe Harbor Water Power Corporation? A. No, I don't say that.

Q. Do you agree with it in the light of your knowledge of those statements, in the light of your knowledge of the operations of Safe Harbor Water Power Corporation? A. If this is a statement intended to cover contractual [1824] obligations and operations I would think that the operational effects on the supply from Safe Harbor might result in not all of the supply of Safe Harbor going directly to Consolidated and Penn Water but some of it perhaps going directly to the customers.

Q. That disposition would depend on Penn Water, wouldn't it? A. I think so.

[1831] MR. GOLDBERG: May it be stipulated, Mr. Examiner, that page 17 of the main brief filed by Messrs. Hambright, Arthur and George Hull and Hull, Leiby and Metzger in the Safe Harbor case, IT-5914, con-

tains this statement: "Although Respondent"—meaning Safe Harbor—"is a party with Holtwood Company to many of the latter's firm power contracts, Respondent's entire output is sold contractually to Baltimore and Holtwood Companies"?"

MR. SPARKS: I will stipulate to that but not to the relevancy of the statement in these proceedings. I object to it on that ground.

TRIAL EXAMINER: Very well. The objection is overruled.

By MR. GOLDBERG:

Q. Holtwood's firm power customers are Pennsylvania Power and Light Company, Metropolitan Edison Company and Philadelphia Electric Company—is that right?
[1832] A. And Pennsylvania Railroad Company.

• • •
Q. The effect of Items "H" and "I" is that Consolidated is entitled to all of the steam and hydroelectric energy which Holtwood generates and purchases from Safe Harbor, less that amount which Holtwood must use to supply the requirements of the Pennsylvania firm customers. Is that a fair statement? A. May I have that read, please?

(Question read.)

THE WITNESS: Well, in general. I wouldn't say that is a closely accurate statement. I would have to think it over.
• • •

[1833] Q. Holtwood does generate electric energy at its steam and hydro plants—right? A. That is right.

Q. And it also purchases from Safe Harbor. Is that right? A. Yes, sir.

Q. Consolidated under its agreement with Holtwood, Items "H" and "I", is entitled to all that less the amount which Penn Water uses to supply the requirements of its

firm customers of Pennsylvania. Isn't that so? A. That seems to be right.

Q. Isn't it true that the contractual arrangements that exist between Consolidated, Safe Harbor, Holtwood and their respective customers were so arranged to permit the maximum coordination for overall economy of service and operations? A. Yes, sir.

Q. And that end could not have been achieved if allocations of rates, charges and revenues were required. Isn't that so? A. It certainly could have been achieved only with great difficulty and perhaps not at all.

Q. In other words, one of the advantages of the type of arrangements that exist between Safe Harbor, Consolidated and Holtwood and their respective customers is the avoidance of the need of allocations of rates, charges and revenues. Isn't that so? A. Yes.

[1834] Q. I want to show you Safe Harbor's counsel's request for findings in the Safe Harbor case, Docket No. IT-5914, as contained in their main brief. I refer more particularly to Finding No. 20, which is as follows:

"The rates and charges made and received by Respondent"—meaning Safe Harbor—"for the sale of electric energy under the contract dated June 1, 1931, are just and reasonable."

Do you agree with that statement?

[1836] Q. I would have to change the wording a little bit and say that rates and charges made and received by Respondent for the sale of electric service under the contract dated June 1931, are just and reasonable from the economic viewpoint—though I cannot say that they are just and reasonable from the regulatory viewpoint because I am not competent.

Q. You find you cannot agree with the finding as it stands in the request to the Commission by your counsel. Is that right? A. As a layman I would word it differ-

ently, but I, of course, cannot take exception to the way counsel has written it.

Q. You retained them to express a legal view of the matter and you are not in a position to say their legal view is not the correct one. Is that right? A. Yes, sir.

Q. I direct your attention to the request for findings in the same document I described, more particularly number 21, and ask you if you agree with that one which is as follows: "The rates and charges made and received by Respondent"—meaning Safe Harbor—"for the sale of electric energy under the contract dated June 1, 1931"—meaning items E, F, and G—"and the rules, regulations and practices pertaining to such charges are not unjust, unreasonable, unduly discriminatory, nor preferential."

[1837] MR. SPARKS: I object to that, if your Honor please, on the ground it has no materiality.

TRIAL EXAMINER: Read the question, please?

(Question read.)

MR. SPARKS: Do you have it before you, Mr. Walls?

THE WITNESS: Yes, sir.

TRIAL EXAMINER: Objection is overruled.

THE WITNESS: Taking exception again to the phrase "Sale of electric energy".

By MR. GOLDBERG:

Q. You agree? A. I would not feel that I am competent to disagree with counsel in an expression concerning this regulatory aspect of discrimination, preferentiality, and so forth.

Q. How about with respect to their reference to the contract as a sale of electric energy involving the sale of electric energy? Are you competent to disagree with them on that? A. As an engineer I would refer not to the sale of energy but to the sale of electric service.

Q. This is not the first time you have seen findings 20 and 21, is it, Mr. Walls? A. No, sir.

Q. Have you ever taken exception to the way it was phrased before this? [1838] A. No, sir.

Q. Did you see it before it was filed with the Commission? A. I think so.

Q. Before it was printed? A. Possibly.

Q. You took no exception to it? A. No, sir.

MR. GOLDBERG: May it be stipulated that Findings 20 and 21, which I have just been discussing with the witness, were requested findings that the Commission has been asked to make in the Safe Harbor proceeding known as Docket No. IT-5914?

MR. SPARKS: I stipulate to that effect, if your Honor please, but I object on the ground they are not material to this proceeding.

TRIAL EXAMINER: Objection is overruled.

Q. You are thoroughly familiar, are you not, Mr. Walls, with that Safe Harbor case in which proceedings the brief from which I have been reading was filed. Isn't that so? A. I am not thoroughly familiar. I know in general about it.

Q. You attended all the sessions of the hearing, didn't [1839] you? A. Yes, sir.

Q. You testified in that case? A. Yes, sir.

Q. And you testified rather fully about the contractual arrangements of Safe Harbor, didn't you? A. I think so.

Q. So you certainly are familiar with those aspects of the case, anyway, aren't you? A. To an extent; yes, sir.

Q. Do you know of any contention in the Safe Harbor case that Safe Harbor does not sell electric energy under items E, F, and G?

MR. SPARKS: Objection on the ground it is not material here what contentions were made in the Safe Harbor case.

TRIAL EXAMINER: Let me have the question, please?
(Question read.)

TRIAL EXAMINER: Objection is overruled.

THE WITNESS: No, I don't remember any.

By MR. GOLDBERG:

Q. Do you know of any contention that was made in that case that the rates, charges or services under items E, F, and G, are joint rates, charges and services?

MR. SPARKS: Objection.

TRIAL EXAMINER: Objection overruled.

[1840] THE WITNESS: No, I don't remeniber.

By MR. GOLDBERG:

Q. Do you know of any contention in that casé that Safe Harbor sells electric energy under items H and I?

MR. SPARKS: Same objection.

MR. GOLDBERG: That is H and I in this proceeding,
Mr. Examiner.

TRIAL EXAMINER: Objection overruled.

Q. You don't remember any such contention? A. I
don't remember any.

Q. Do you know of any contention in that Safe Harbor case that the services rendered to Consolidated under items H and I are rendered jointly by Safe Harbor and Holtwood?

MR. SPARKS: Objection--same objection.

TRIAL EXAMINER: Objection overruled.

THE WITNESS: I don't remember any.

By MR. GOLDBERG:

Q. Do you know of any contention in that case that the services rendered to Pennsylvania Power and Light Com-

pany, [1841] Philadelphia Electric Company, and Metropolitan Edison Company are rendered jointly by Safe Harbor and Holtwood?

MR. SPARKS: Same objection.

TRIAL EXAMINER: Objection overruled.

THE WITNESS: I don't remember any.

By MR. GOLDBERG:

Q. Do you know of any contention in that case with respect to the rates and charges or services of Safe Harbor other than those involved in items E, F, and G?

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MR. SPARKS: Same objection.

TRIAL EXAMINER: Objection overruled.

THE WITNESS: I don't remember any.

[1842] Q. Do you know of any contract that it was contended in the Safe Harbor case did involve rates, charges or services by Safe Harbor and should be passed on by the Commission in that case?

MR. SPARKS: Same objection on the ground it has no materiality in this proceeding.

TRIAL EXAMINER: Objection overruled.

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THE WITNESS: I don't remember any.

By MR. GOLDBERG:

Q. Do you know of any contention in the Safe Harbor case that the Federal Power Commission is without jurisdiction over the rates, charges or services of Safe Harbor because they are joint rates, charges or services?

MR. SPARKS: Same objection.

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[1843] THE WITNESS: I don't remember.

TRIAL EXAMINER: Objection is overruled. The answer may stand.

By MR. GOLDBERG:

Q. You say you don't know of any? A. That is right.

Q. Do you know of any contention in the Safe Harbor case that the Commission is without jurisdiction over any of Safe Harbor's contracts because they involve the sale of capacity and not sale of electric energy?

MR. SPARKS: Same objection.

TRIAL EXAMINER: Just a minute, please.

Objection is overruled.

THE WITNESS: I don't know of any.

[1844] **MR. SPARKS:** Of course, we take the position they are not appropriate, none of these questions, based on contentions made in Safe Harbor are material. I insist that is correct, if your Honor please.

What was contended in the Safe Harbor case has no bearing here whatever. Other contentions may still be made in Safe Harbor. It is not too late.

[1852] **TRIAL EXAMINER:** The Examiner feels this way: You are not going to be able to prove basic jurisdiction by proving [1853] inconsistent statements. That goes to the weight to be given to expert opinion on the theory a good deal you have to establish with respect to jurisdiction will have to be derived from expert opinion. There will have to be a limit to this inconsistent statement business.

[1859] Q. Mr. Walls, in 1944 Safe Harbor had its contract with Consolidated and Holtwood, known as Items "E", "F" and "G" in this case—right? A. Yes, sir.

Q. And that was true in 1945—right? A. Yes, sir.

Q. And it is true in 1946, right? A. Yes, sir.

Q. And in 1944 Safe Harbor was also named in the contracts which have been marked for identification as Exhibits 71, 73 and 76—right? A. Yes, sir.

Q. And that was also true all through the year 1945—right? A. Yes, sir.

Q. And from January 1, 1946, up to and including today, Safe Harbor still had its contracts which have been marked for identification as Exhibits 71 and 76—right? A. Yes, sir.

[1860] Q. But 73 was superseded. Is that correct? A. Yes, sir.

Q. I am sorry. I should say that it still had in 1946 up until today its contracts which have been identified as Exhibits 73 and 76—right? A. That is right.

Q. And 71 was superseded at the end of 1945—right? A. Yes, sir.

Q. And it was not a party to the contract which is identified as Exhibit 72. Is that correct? A. That is correct.

Q. And when we referred to the year 1944, the contracts that Safe Harbor had, we meant the entire year 1944, didn't we? A. Yes, sir.

Q. And in 1944 and 1945, and that part of 1946 which has expired, Safe Harbor sold its entire output under Items "E", "F" and "G"—right?

[1861] MR. GOLDBERG: If the word "sold" offends counsel for the Respondents I am willing to substitute "disposed." Disposed of its entire output to Holtwood and Consolidated.

A. No, I believe from an engineering viewpoint that Safe Harbor's supply was at times and in part supplied to others than Holtwood and Consolidated; namely, some of the Pennsylvania customers and including the Pennsylvania Railroad.

Q. Did Safe Harbor supply that or did Holtwood supply that? A. I am speaking of the flow of supply from Safe Harbor is an engineering sense and not speaking of the legal concept [1863] growing out of any contractual arrangement.

Q. In other words, you are saying that Safe Harbor generated the electric energy, generated electric energy which in part was used to supply the requirements of the Pennsylvania Railroad and the Pennsylvania customers. Is that it? A. Yes, sir, using energy in the sense that I have used it.

[1863] Q. You are saying Safe Harbor generated a supply which in part was delivered to Consolidated and in part was delivered to Holtwood, and the part delivered to Holtwood was in turn delivered by Holtwood to the Pennsylvania customers and the Pennsylvania Railroad—right? A. No, sir, I am not saying that at all. I am speaking not of delivery in the contractual sense. I am speaking of the flow of supply. That supply would flow directly over transmission lines to various customers other than Consolidated.

[1864] Q. I was not speaking of the delivery in a contractual sense. I understand you prefer not to discuss it in that sense. I was speaking of it in terms of flow. In those terms Safe Harbor generated a certain supply. Is that right so far? A. Yes, sir.

Q. Part of that supply was transmitted to Consolidated—right? A. At times, yes, sir.

Q. Over the facilities of Safe Harbor, Penn Water and Susquehanna Transmission Company of Maryland—right? A. Yes, sir.

Q. The part which was not so transmitted was transmitted to Holtwood—right? A. No, sir. For example, a portion of it would go pretty directly into the Pennsylvania Railroad system at Safe Harbor. A portion of it might go at times directly to Lancaster over transmission